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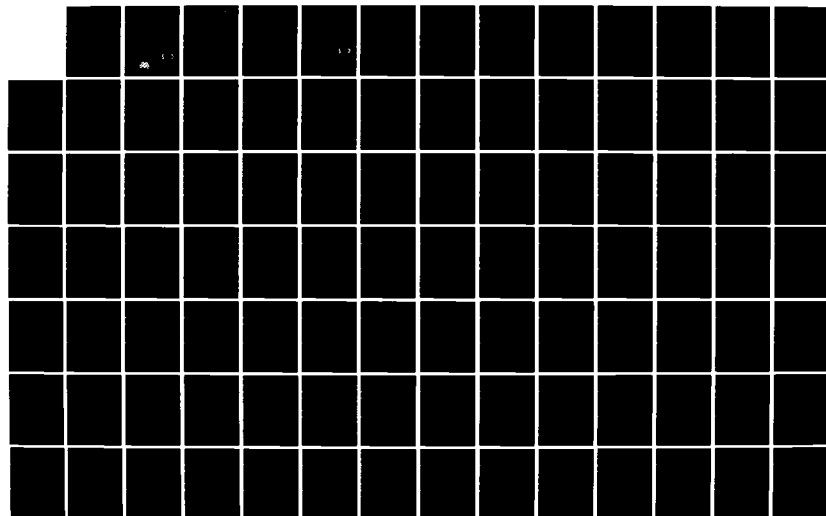
STATUS OF METRIC CONVERSION A SURVEY OF US STANDARDS-  
WRITING ORGANIZATIONS(U) UNITED STATES METRIC BOARD  
ARLINGTON VA J M TASCHER ET AL. MAY 82

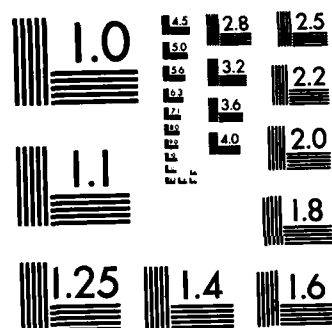
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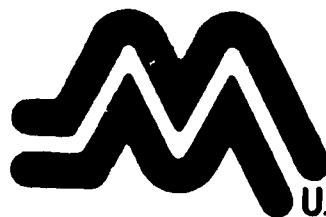
# Status of Metric Conversion A Survey of U.S. Standards Writing Organizations

May 1982

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19. ABSTRACT (Continue on reverse side if necessary and identify by block number)  This interim Report provides the results of a brief survey of metric conversion of all known U.S. standards development organizations. It provides a general status report and reference document on metric conversion in the standards development community. The survey asked questions such as:  1. Does your organization have a policy on metric conversion? 2. Who is the metric conversion contact point in your organization?		

20.

3. What system of units does your organization use in its standards and publications?

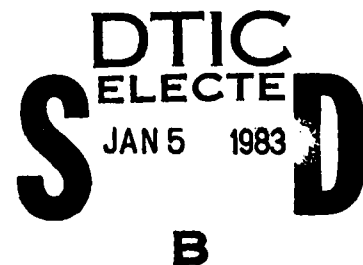
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1. An analysis of the responses.
2. A chart listing all the responses by each standard development organization.
3. A comments section which lists the comments submitted by the responding organization.
4. A bibliography section which lists all bibliographies, references submitted by the responding organizations.

**UNITED STATES METRIC BOARD**  
**OFFICE OF RESEARCH, COORDINATION AND PLANNING**

**Status of Metric Conversion**  
**A Survey of U.S. Standards**  
**Writing Organizations**

**May 1982**



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**STATUS OF METRIC CONVERSION  
A SURVEY OF U.S. STANDARDS WRITING ORGANIZATIONS**

**EXECUTIVE SUMMARY**

This Interim Report provides the results of a brief survey of metrication of all known U.S. standards development organizations. It provides a general status report and reference document on metrication in the standards development community. The Report is in four main parts:

1. An analysis of the responses.
2. A chart listing all the responses by each standards development organization.
3. A comments section which lists the comments submitted by the responding organizations.
4. A bibliography section which lists all bibliographic references submitted by the responding organizations.

(The responding organizations which provided comments and bibliographic references are indicated on the Chart by asterisks in the "Comments" and Biblio" columns respectively).

The results of the survey are as follows:

1. There were 283 responses out of 420 organizations queried, a response rate of 67 percent.
2. Sixty of the 275 responding organizations or 21 percent have a formal policy on metrication. Most of the policies deal with one or more of the following: (1) stated support of the Metric Conversion Act of 1975 and of voluntary metrication, (2) stated the intention to monitor metric conversion trends in the constituent industries and in the nation, and (3) stated how units will be used in their standards and publications.
3. Most organizations (201 or 72 percent) listed contact points, either members or staff persons, for metrication matters. The remaining 82 (28 percent) did not respond.
4. Only 10 or 3 percent of the organizations reported sponsorship of conferences or courses on metrication for their membership.
5. A total of 32 or 11 percent of the organizations reported that they have publications devoted to metrication.
6. About 42 percent (120) of the organizations primarily use English units in their technical publications, 5 percent (15) use metric, and 38 percent (109) use dual units (several more report

other combinations and 26 or 9 percent did not respond to this question).

7. About 41 percent (117) of the organizations use English units primarily in their standards, 6 percent (18) use metric, and 31 percent (88) use dual (again, several more report other combinations and 52 or 18 percent did not respond to this question).

8. When asked how many years will elapse before the constituencies they serve will be converted to metric, 12 (4 percent) said they are now converted, 81 (28 percent) estimate 10 years, 47 (16 percent) estimate 25 years, 9 (3 percent) estimate 50 years and 58 (20 percent) estimate other periods (a few) or state that it depends on their constituencies (76 or 26 percent did not respond to this question).

The survey responses reflect a general feeling that metrication is coming. Virtually all who stated an opinion, support the Metric Conversion Act and voluntary metrication. Many organizations are monitoring conversion trends in the Nation in order to keep their members informed. Most standards organizations appear to be interconnected with other standards organizations; many individual standards organizations serve different constituencies. This situation makes the decision to convert dependent on other organizations and industries; many standards organizations need to develop metric standards for parts of their constituencies but maintain English standards for others of the constituencies. The standards organizations react to the need of their constituencies.

STATUS OF METRIC CONVERSION  
A SURVEY OF U.S. STANDARDS WRITING ORGANIZATIONS

**I. INTRODUCTION**

The U.S. Metric Board was established by the Metric Conversion Act of 1975 (14 Stat. 339; 15 U.S.C. 204-5) which "declares a national policy of coordinating the increasing use of the metric system in the United States, and establishes a U.S. Metric Board to coordinate the voluntary conversion to the metric system".

After considerable delay in Senate confirmation of the 17 Board members the Board finally was established in 1978 and has since been active in programs of research, coordination and planning, information and education. The Board is dedicated to assisting groups wishing to convert voluntarily to the metric system in the most cost-efficient and least disruptive manner possible.

Although the enabling legislation which created the Metric Board is called the "Metric Conversion Act," conversion in the country is entirely voluntary. Congress established no deadline for it. The Board has no compulsory power and no mandate to promote conversion to the metric system.

Under the law, the Board's job is to educate, inform and assist those parties who make a voluntary decision to convert. Because conversion is occurring voluntarily on a company-by-company and industry-by-industry basis, it is difficult to predict when, if ever, the metric system might become the predominant means of measurement in the United States. It may take ten years, or much longer, or it may never occur on a completely voluntary basis. Some view this as a serious flaw in the law and have communicated their concern to the Metric Board. Others believe that a "laissez faire" approach is best for the U.S. economy.

Sections II, III, and IV give a brief review of the standards portion of the Metric Conversion Act, the early standards activities of the U.S. Metric Board, and the approach used by the Board in developing a final standards report with recommendations. Sections V and VI describe how the brief survey of all known U.S. standards development organizations was conducted and what the results of the survey are.

**II. BRIEF REVIEW OF STANDARDS PORTION OF THE ACT**

Sections 6(4), 6(5), and 6(6) of the Metric Conversion Act deal directly with standards. Briefly, the United States Metric Board is required to:

6(4) encourage organizations to rapidly develop engineering standards on a metric basis and to take advantage of simplification opportunities, rationalization, etc.

6(5) encourage retention in new metric language of U.S. standards, designs, conventions, etc., which

1. embody superior technology, and
2. are now internationally accepted

6(6) work with the Department of State, international organizations, foreign governments, etc. to:

1. seek international acceptance of U.S. standards, and
2. encourage retention of equivalent, customary units in international standards during U.S. conversion.

### III. EARLY STANDARDS ACTIVITIES OF THE BOARD

The first two years of the Board's existence were not very active ones as far as standards matters are concerned. The Board did send letters dated March 22, 1979 to 400 standards writing organizations to tell them about the standards section of the Act and of its desire to cooperate with them.

On December 12, 1979, the Standards Liaison Committee of the U.S. Metric Board agreed to have the staff gather background information and make recommendations for development of a "standards strategy" to meet the requirements of the three sections of the Act that deal with standards. In order to define the problem, and plan a strategy, the Board staff initially visited the following organizations:

American National Standards Institute

American National Metric Council (ANMC), and the ANMC Ad Hoc Standards Task Group

American Society for Testing and Materials

The Deputy Assistant Secretary of Commerce for Product Standards, and Chairman of the Interagency Committee on Standards Policy

The Metric Standards Subcommittee of the Interagency Committee on Standards Policy (the staff regularly participates in meetings of this Subcommittee)

Metric Commission Canada, the Canadian Standards Association, and the Standards Council of Canada

The National Standards Association, Inc.

### IV. STANDARDS STRATEGY

Based on information collected from these visits, the staff developed a strategy for collecting information on a systematic basis from U.S. standards developing bodies, both public and private,

in order to make recommendations to the Board on how to meet the requirements of the Metric Conversion Act. The staff recommendations on information collection were approved by the USMB Standards Liaison Committee at its November 20, 1980 meeting. These activities were in three parts:

1. The initial task of the Board was to explore and then define the term "standards" as meant by Congress. After some initial work on a global task of making a complete taxonomic analysis of the world of standards, the conclusion was reached that with the resources available it would be necessary to find a way to simplify the task. The staff settled on use of an already established Federal Material and End Item breakdown structure known as the Federal Cataloging System. The initial effort the staff made was to investigate the feasibility of initially using the Department of Defense portion of the approximately 700 Federal Supply Classes (FSC), groups and areas as a pilot classification system by which the U.S. Metric Board might monitor public and private metric conversion activities and associated supporting standards work. Under this concept the 100 FSC assignee/preparing activities that write the standards for items in each FSC would be asked to provide metric status and outlook information in their annual standardization reports. The Board would ask that the reports would not only indicate firm in-house plans and funded projects but would also indicate the federal technical experts' best information about planned private sector conversion activity and plans for development of metric standards. The results of this survey will be published in late FY82.

2. The staff then conducted structured interviews with the following standards developing/writing organizations. The following organizations were interviewed:

1. Aerospace Industries Association on May 4, 1981
2. American Concrete Institute on April 29 and 30, 1981
3. American Society for Testing and Materials (preliminary meetings on June 26, 1980 and July 31, 1980) and letter dated September 30, 1981 summing up ASTM answers to interview guide
4. The American Society of Mechanical Engineers on May 12, 1981
5. Institute of Electrical and Electronics Engineers on May 12, 1981
6. National Electrical Manufacturers Association on December 8, 1981
7. National Fire Protection Association (letter reply dated March 19, 1981)
8. Society of Automotive Engineers on April 21, 1981
9. Underwriters' Laboratories on January 4, 1982

These nine organizations were suggested by the American National Standards Institute and the American Society for Testing and Materials and are thought to be particularly knowledgeable about the process involved in the development of a wide spectrum of engineering standards. Thus, the structured interviews would provide the Board insight about

how Standards organizations are handling the use of the metric system in standards development.

3. Finally the staff recommended that this report, a brief survey of the over 400 standards development organizations listed in the November 1980 list "U. S. Organizations Represented in the Collection of Standards Maintained by the National Bureau of Standards" be conducted. A survey questionnaire was mailed to those organizations under a memo dated May 29, 1981. Questions included:

- a. does your organization have a formal policy on metrication?
- b. what units does your organization use in technical publications, and its codes and standards?

The purpose was to get a general impression on the extent to which standards bodies have official metric policies, what their policies generally require, and the extent of metric usage in standards and codes. The results are give in this report.

The findings in this report as well as the findings from the other tw reports cited above, along with information from the American Nationa Standards Institute, and other sources cited on page 2 will form the background for any U.S. Metric Board recommendations regarding standards. In addition, it is hoped that this report will serve as a useful reference document on the status of metrication in the U.S. standards developing organizations.

#### V. THE SURVEY

A survey form (copy in appendix A) was sent to the 432 organizations listed in the November 1980 list "U.S. Organizations Represented in the Collection of Standards Maintained by the National Bureau of Standards" by letter dated May 29, 1981 signed by Adrian G. Weaver, Chairman of the Planning and Coordination Committee of the U.S. Metric Board. A follow-up letter dated August 19, 1981, was sent to the non-responding standards bodies. The August 19, 1981, letter emphasized that the metric conversion and standards development processes are voluntary and predominantly private sector initiated. The Metric Board has no intention of intruding into either process. The goal of the survey is only to gain an understanding and serve as a reference regarding the processes and the way in which the private, voluntary standards system is responding to the demands created by the increasing use of metric measures. The Board wants to have sufficient knowledge and understanding to assist, when called upon, in cases where inefficiencies occur in the metric conversion process which are caused by or attributed to standards.

Surveys were mailed to the 420 standards developing bodies on the list. As of the time of analysis (March 1982), 283 responses were received for a response rate of 67 percent. In additon, 6 were returned by the U.S. Postal Service as "not deliverable", and three

responses were received which could not be identified. The remaining 128, were non-respondents. It is likely that some of the non-respondents do not deal with measurement sensitive standards and did not feel that the questions were applicable to their organizations.

Information from the responses is shown on the chart on pages 16 - 86. Those organizations stating comments and bibliographic references are indicated on the chart by asterisks. The comments and references are listed in the "Comment" section on pages 87 - 106 and the Bibliography section on pages 107 - 117 respectively.

## VI. ANALYSIS

Following is an analysis of the responses for each of the six questions.

### Question 1. Does your Organization Have a Formal Policy on Metrication?

Out of the 275 organizations which responded to the question, 60 or 21 percent stated they have a formal policy, while 215 or 75 percent said they did not. (The remaining did not respond). Generally, the formal policies covered at least one of the following: (1) stated support for the Metric Conversion Act of 1975 and for voluntary metric conversion, (2) monitored metrication in order to keep in synchronization with national and/or industry metrication needs, and (3) stated rules for use of units in publications and standards in order to make them more useful and understandable to all audiences. Typically, the publications and standards were to use either dual units or conversion tables. The usual case in dual units was to use English units as the primary units with the soft conversion in metric in parenthesis. For several organizations (such as Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.), dual units prevail now, but when conversion takes place in industry, metric dimensions will become primary for one edition; thereafter, English dimensions will be dropped. Exceptions are made when the technology has basically been converted. Several industries indicated that parts of the industry use metric as primary units and other parts use English in standards - an example is the Fluid Controls Institute.

Timetables for conversion of standards were very rarely indicated. For many of the standards developing organizations, the principal objective is the development and dissemination of new technology (example is the American Foundryman's Society where the technology is related to the manufacture and use of metal castings). Where products have end uses in many different industries (such as castings), the producers must respond to the desires and needs of the markets they serve. The different industries may well convert at very different times. Other industries depend largely on conversion of other bodies. For example, the Tubular Exchanger Manufacturers Association policy is to follow conversion of the ASME Boiler and Pressure Vessel Code.

Many organizations, especially those related to supply of products to a large, decentralized industry like construction, said they cannot unilaterally initiate metrication but must await an industry-wide decision. Such organizations are the: Construction Industry Manufacturers Association, Prestressed Concrete Institute, Gypsum Association -(although it states opposition to "hard metric sizes based on the 100-mm module").

Several organizations like the Chemical Specialties Manufacturers Association state that the responsibility for conversion is with each member company acting with related parties. The National Soft Drink Association, does not have a national policy; in the case of NSDA, metrication is a matter for marketing policies of individual companies. In many organizations the use of metric or English units is left to the technical committees responsible for the standards.

The Society of Motion Picture and Television Engineers has a policy that all nongeometric specifications are in terms of SI units, but that all geometric dimensioning (plane angle, length and area) are in English units as the primary system.

Some organizations are already converted and merely support routine use of metric (e.g. American Pharmaceutical Association).

Many organizations state the willingness to work with ANMC to obtain consensus on proposed plans.

Question 2. What Group/Person in Your Organization is Responsible for Metric Activity?

Out of 201 organizations responding to this question, 39 (13 percent) listed members, often special metric committees composed of members, 114 (40 percent) listed staff personnel, and 48 (11 percent) listed both member contacts and staff contacts. A total of 82 (28 percent) did not respond. All the contacts, members and staff, which were named are listed on the chart.

Question 3A. Does Your Organization Have Programs in Areas of Conferences/Short Courses on Metrication?

Ten organizations (3 percent) replied that they have sponsored conferences/short courses on metrication, 259 (91 percent) have not, and 14 (4 percent) did not respond.

The following stated that they have sponsored conferences/short courses:

- American Congress on Surveying and Mapping.
- American Society for Testing and Materials.
- American Society of Heating, Refrigeration and Air Conditioning Engineers.

Associated Cooperage Industry of America.  
College of American Pathologists.  
Forging Industry Association.  
Gummed Industries Association,  
MTM Association for Standards in Research.  
National Association of Garage Door Manufacturers.  
National Committee for Clinical Laboratory Standards.

Question 3B. Does your Organization Have Programs in Areas of Publications Devoted to Metrication?

A total of 32 (11 percent) of the organizations have publications devoted to metrication, 238 (84 percent) do not have, and 13 (4 percent) did not respond.

Perhaps the most extensive publications effort was by The American Society of Mechanical Engineers which has issued the following education and information books on metrication for its members:

Council Policy P-9.1 on Metric System, May 4, 1977.

SI-1, ASME Orientation and Guide for Use of SI Metric Units, 1978.

SI-2, SI Units in Strength of Materials, 1976.

SI-3, SI Units in Dynamics, 1976.

SI-4, SI Units in Thermodynamics, 1976.

SI-5, SI Units in Fluid Mechanics, 1976.

SI-6, SI Units in Kinematics, 1976.

SI-7, SI Units in Heat Transfer, 1977.

SI-8, SI Units in Vibration, 1976.

SI-9, ASME Guide for Metrication of Codes and Standards, SI (Metric) Units, 1981.

SI-10, Steam Charts, SI (Metric) and U.S. Customary Units, 1976.

ASME Steam Tables in SI (Metric) Units for Instructional Use, 1977.

Other societies have more modest publications such as publications by the Society of Automotive Engineers of "Metrication and SAE" dated January 1972.

Many societies have published articles on metrication in their member newsletters and publications.

**Question 4. Which System of Units Does Your Organization Primarily Use in Your Technical Publications?**

Out of 257 responses to this question, 120 (42 percent) use English units as the primary unit in their technical publications, 15 (5 percent) use metric units and 109 (38 percent) use dual units. There were a few organizations which stated they use a combination:

- a. 2 use English and Dual about equally.
- b. 5 use Metric and Dual about equally.
- c. 4 use English, Metric and Dual about equally
- d. 2 use English and Metric about equally.

Many organizations publish articles as submitted by the authors; there are no efforts made to change the units in these articles (example are articles published by the American Foundrymen's Society).

Other societies conform to their publication policies as stated under question 1. Typically this is where soft converted metric terms are put in parenthesis after the English units (example is the Asphalt Institute), or conversion tables are included in the publications (as is done by Cast Iron Soil Pipe Institute).

The American Society of Agricultural Engineers has a specific policy for publications: For publications, "SI units shall be the primary units with older units in parenthesis effective January 1, 1980. SI units may be the primary units without older units in parenthesis but with a conversion table if necessary for comprehension effective January 1, 1981. SI units shall be the primary units without older units effective January 1, 1982. SI units may be used immediately for familiar units with footnotes to explain unusual terms."

The Metal Cookware Manufacturers Association has published for its members and users two publications:

- a. "A Metric Guide for Cookware and Bakeware", November 1, 1976, and
- b. Metal Cookware and Bakeware with Complete Metric Information.

The Prestressed Concrete Institute has published "Initial Steps for Implementation of PCI Board Policy on Metrication" in January 1978. This states seven activities for PCI metrication including soft conversion of citations in PCI publications, expanded educational activities, adoption of the 100-mm module as a basic unit, adoption of a basic panel size of 1200 x 2400 mm, and a metric plan and schedule for hard conversion at the appropriate time. The National Association of Rocketry uses metric in technical publications and dual units in general publications.

**Question 5. If Your Organization Publishes Standards which are Measurement-Sensitive, Which Units are Primarily Used?**

Out of 231 respondents to this question, 117 (41 percent) primarily use English units in their standards, 18 (6 percent) use metric units, and 88 (31 percent) use dual units. A scattering of other responses show:

- a. 2 using English and dual about equally.
- b. 4 using English, metric and dual about equally, and
- c. 2 using English and metric about equally.

Many organizations have publications which provide guidelines for use of metric units in their publications and standards. These publications often contain information on proper metric practice and list conversion factors. Listed below are some examples:

- a. American Concrete Institute. "Instructions to Committees Regarding Metric Units in the Technical Committee Manual." (Sections 3.4.5 and Appendix A-3), June, 1979.
- b. American Nuclear Society, "Metric Guide for ANS Publications", April 1981.
- c. American Society for Testing and Materials. "Standard for Metric Practice", 1979. The ASTM "Use of Metric" (SI) Units in ASTM Standards" from Part H of Form and Style for ASTM Standards, June 1980, gives instructions to guide its technical committees.
- d. American Society of Agricultural Engineers, ASAE EP 285.5 "Use of SI (Metric) Units", September, 1980.
- e. Asphalt Institute. "A Metric Guide", Information Series No. 165, August, 1974.
- f. Association of Home Appliance Manufacturers. "AHAM Standard SI Metric Practice Guide for the Appliance Industry". April 1979.
- g. Compressed Gas Association. "Metric Practice Guide for the Compressed Gas Industry". 1980.
- h. Dairy and Food Industries Supply Association, Inc. "Report of DFISA Task Committee on Metric Practice." May 3, 1978.
- i. National Committee for Clinical Laboratory Standards. "Quantities and Units: SI" PPC-11, 1979.
- j. National Electrical Manufacturers Association. "Guidelines for Metric Conversion of NEMA Standards". Engineering Department Bulletin. No. 79, June 3, 1976. and "Legal Guidelines for Metrication of NEMA Standards".
- k. National Fluid Power Association. "5.8 Units" from "National Fluid Power Association Style Guide." Undated.
- l. SAE Metric Advisory Committee. "SAE Recommended Practice, Rules for SAE Use of SI (Metric) Units", SAE J916, June 1980.
- m. Water Quality Association. "WQA Submits Recommended

(Voluntary) Metric Conversion Standards to U.S. Metric Board". Special Bulletin No. 8/81. January 1981.

ANSI technical publications and standards and codes cite English only, metric only, or dual units depending on the needs of the developer of the individual standard or publication. ASTM and several other organizations state that their technical committees determine their own usage policy. The Tire and Rim Association says the standards are primarily published in customary units, with a procedure for soft conversion.

Those organizations citing dual units as the predominant usage typically have soft converted metric units in parenthesis. Many (such as American Petroleum Institute) institute dual usage when the codes and standards are revised. Several using dual units specify metric with English in parenthesis. These include the Illuminating Engineering Society in the IES Lighting Handbook, and in recent years the Society of Motion Picture and Television Engineers.

The National Fire Protection Association has a directive to soft convert all standards within five years. Since 1972, Underwriters' Laboratories has worked with its client industries to add equivalent SI units for all stated U.S. customary units in its standards for safety. At this time, approximately 75 percent of UL's standards include equivalent SI units.

Several organizations require metric. The American Vacuum Society requires SI, but dual units are permitted.

Several organizations are abandoning use of dual units. The Insulated Cable Engineers Association is adopting the philosophy of replacing dual units with conversion tables. The National Environmental Balancing Bureau and the American Concrete Institute publish conversion tables and equations in their codes and standards.

The Aluminum Association and the American Society for Testing and Materials are developing separate, but parallel, metric and English based standards. In the case of the Aluminum Association, individual member aluminum companies are now publishing metric product data basically derived from the standards on preferred metric sizes. The parallel versions are not soft converted one from the other, but rather the dimensions are given in rational numbers, one set for the metric version, and another set for the English version.

Question 6. How Many Years Do You Estimate will Elapse before the Constituency you Serve Expect to be Converted to Metric?

Out of 207 responses to this question, 12 organizations (4 percent) are converted (0 years), 81 more (28 percent) expect to

be converted within about 10 years, 47 more (16 percent) within 25 years, and 9 more (3 percent) within 50 years. The remaining 58 (20 percent) either gave another estimated time period, or said unknown and stated a comment (such as depends on another industry or when there is a national mandate). There were 76 (26 percent) who did not respond to the question, or stated unknown but indicated no comment.

Constituencies in the hospital, health, chemical, laboratory testing, and pharmacy areas now already use the metric system routinely. Many organizations say their membership can supply metric sizes by special order (e.g. American Plywood Association). Other organizations say their membership can supply products to whatever dimensions or units are requested by the customer (examples are Copper Development Association, Composite Can and Tube Institute, National Association of Relay Manufacturers).

Many things can be described either in English or metric; an example was given by the American Railway Engineering Association -- railway gauges can be either 4 feet 8 1/2 inches or 1435 mm). The Scientific Apparatus Makers Association says its industry can supply English or metric at user request.

For a number of organizations, some constituencies have converted and others have not. For example, the Society of Automotive Engineers serves an industry which produces a vast array of products - some portions have already converted whereas other areas will be converting over a period of some 50 years. The American Conference of Government Industrial Hygienists have converted in some areas, but in others, especially the design of local exhaust ventilation systems, there are no metric standards even in metric countries.

Several organizations, such as the American Society of Quality Control, publish generic procedural standards, not measurement sensitive product standards. ASQC represents a broad community of quality professions that encompasses a vast community of multiple industries, services and disciplines. It is therefore hard to estimate when it expects its constituency to be converted to metric. ASQC sees metrication coming, but it will hit members at different times. The Compressed Gas Association says many industries and associations utilize its products in a variety of ways so the demands of each constituency will determine individual conversion rates.

Many organizations believe that there is no good basis for estimating years before its constituency converts. A significant example are virtually all the organizations that deal with the construction industry. They stand ready to convert when the construction industry and the buyers of construction switch. Such organizations include the following:

American Institute of Steel Construction  
Architectural Woodwork Institute  
Gypsum Institute  
Hardwood Plywood Manufacturers Association  
International Conference on Building Officials  
International Masonry Institute  
National Association of Plastic Fabricators  
Pipe Fabrication Institute

Several bodies, such as the American Institute of Steel Construction have tentative metric specifications and manuals but are being kept in files until the appropriate time.

Other standards organizations say conversion of their constituents is dependent on metrification of basic material suppliers. Examples are:

American Boat and Yacht Council  
American Bureau of Shipping  
Truck Trailer Manufacturers Association  
Western Wooden Box Association

The Tubular Exchanger Manufacturers Association will convert standards to be compatible to and consistent with metrification of the ASME Boiler and Pressure Vessel Code.

The Electrical Apparatus Service Association is a trade association repairing electric motors, transformers, etc. and its members cannot change until the manufacturers do. Even then, the association members will have to be dual for many years.

Several said that conversion time depends on government actions, such as the National Recreation and Park Association, National Association of Plumbing - Heating - Cooling Contractors, and Concrete Reinforcing Steel Institute.

Several organizations could see little value and significant costs in metrification: National Concrete Masonry Association and Northern Textile Association.

A large number of the organizations have worked with the American National Metric Council in the development of metric conversion plans for their industries. Examples are: American Congress on Surveying and Mapping, American Textile Machinery Association, Copper Development Association, National Electrical Manufacturers Association and the National Forest Products Association. Many plans as of now do not contain dates. Several organizations serve as secretariats to ANMC Sector Committees.

Notes on Use of the Chart (pages 16 -86). Most entries are self evident and do not need explanation. All organizations which were sent a survey form are listed in the left hand column

whether or not they responded. Those that did not respond simply have no data entered into the other columns. Asterisks entered under the "Comment" and "Biblio" columns indicate that the responders made comments or gave bibliographic references to their publications. Copies of publications were often submitted. The comments and bibliographic references are listed in the "Comment" section on pages 87 - 106, and the "Bibliography" Section on pages 107 - 117 respectively.

# STANDARDS SURVEY AGGREGATE DATA SHEET

## 1 TOTAL SURVEY

SURVEYS SENT BY USMB		SURVEYS RECEIVED BY USMB		SURVEYS RETURNED BY POST OFFICE TO USMB		UNIDENTIFIED RESPONSES	
NUMBER	420	283	6	128	3		
PERCENT		67	1	30			

## 2 QUESTION 1: DOES YOUR ORGANIZATION HAVE A FORMAL POLICY ON METRICATION?

Y (YES)		N (NO)		NR (NO RESPONSE)		TOTAL	
NUMBER	60	25	8	283			
PERCENT	21	75	2				

## 3 QUESTION 2: WHAT GROUP/PERSON IN YOUR ORGANIZATION IS RESPONSIBLE FOR METRIC ACTIVITY?

M (MEMBER)		S (STAFF)		BOTH LISTED		NR (NO RESPONSE)		TOTAL	
NUMBER	39	114	48	11	28	82	283		
PERCENT	13	40	11						

## 4 QUESTION 3A: DOES YOUR ORGANIZATION HAVE PROGRAMS IN AREAS OF CONFERENCES/SHORT COURSES ON METRICATION?

Y (YES)		N (NO)		NR (NO RESPONSE)		TOTAL	
NUMBER	10	259	14	283			
PERCENT	3	91	4				

## 5 QUESTION 3B: DOES YOUR ORGANIZATION HAVE PROGRAMS IN AREAS OF PUBLICATIONS DEVOTED TO METRICATION?

Y (YES)		N (NO)		NR (NO RESPONSE)		TOTAL	
NUMBER	32	238	13	283			
PERCENT	11	84	4				

## 6 QUESTION 4: WHICH SYSTEM OF UNITS DOES YOUR ORGANIZATION PRIMARILY USE IN YOUR TECHNICAL PUBLICATIONS?

E (ENGLISH)		M (METRIC)		D (DUAL)		E & D		M & D		E, M & D		E & M		NO RESPONSE		TOTAL	
NUMBER	120	15	109	2	5	4	2	1	1	26	9	52	18	283			
PERCENT	42	5	38														

## 7 QUESTION 5: IF YOUR ORGANIZATION PUBLISHES STANDARDS WHICH ARE MEASUREMENT-SENSITIVE, WHICH UNITS ARE PRIMARILY USED?

E (ENGLISH)		M (METRIC)		D (DUAL)		E & D		M & D		E, M & D		E & M		NO RESPONSE		TOTAL	
NUMBER	117	18	88	2	4	1	1	1	1	52	18	283					
PERCENT	41	6	31														

## 8 QUESTION 6: HOW MANY YEARS DO YOU ESTIMATE WILL ELAPSE BEFORE THE CONSTITUENCY YOU SERVE EXPECT TO BE CONVERTED TO METRIC?

1 (0)		2 (10)		3 (25)		4 (50)		5 (OTHER)		NR (NO RESPONSE)		TOTAL	
NUMBER	12	81	47	9	58	20	76	283					
PERCENT	4	28	16	3	20	16							

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ORGANIZATION	FORMAL POLICY	PROMOTION		UNITS USED IN TECHNICAL PUBLICATIONS		UNITS USED IN STANDARDS AND CODES		ESTIMATED TIME FOR CONVERSION IN YEARS					COMMENT	BIBLIO
		CONFER	ENCES	ATIONS	ENG	MET	DUAL	0	10	25	50	OT		
Acoustical Society of America (ASA) 335 East 45th Street New York, New York 10017														
The Adhesive and Sealant Council, Inc. (AASC) 1500 North Wilson Boulevard Suite 1117 Arlington, Virginia 22209 Member None Listed Staff None Listed	NO	NO	NO	NO		DUAL				**				
Air-Conditioning and Refrigeration Institute (ARI) 1815 N. Fort Myer Drive Arlington, Virginia 22209 Member Metric Committee Staff M. Analfred	YES	NO	NO	NO		DUAL							***	
Air Conditioning Contractors of America (ACCA) 1228 17th Street, N.W. Washington, D.C. 20036 Member None Listed Staff Hank Rutkowski	NO	NO	NO	NO	ENG					**				
Air Diffusion Council (ADC) 435 North Michigan Avenue Chicago, Illinois 60611 Member None Listed Staff None Listed	NO	NO	NO	NO		DUAL				**			***	
Air Movement and Control Association, Inc. (AMCA) 30 West University Drive Arlington Heights, Illinois 60004 Member None Listed Staff P.G. Danos	NO	NO	NO	NO	ENG		ENG					**		

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ORGANIZATION	FORMAL POLICY	CONFERENCES	PROMOTION PUBLIC AFFAIRS	UNITS USED IN TECHNICAL PUBLICATIONS		UNITS USED IN STANDARDS AND CODES		ESTIMATED TIME FOR CONVERSION IN YEARS						COMMENT	BIBLIO
				ENG	MET	DUAL	ENG	MET	DUAL	0	10	25	50		
Air Structures Institute (ASI) 350 Endicott Building St. Paul, Minnesota 55101	NO	NO	NO	ENG		ENG						**			
Member None Listed Staff Stuart D. Waugh															
Air Transport Associations of America (ATTA) 1709 New York Avenue, N.W. Washington, D.C. 20006															
The Aluminum Association, Inc. (AA) 818 Connecticut Avenue, N.W. Washington, D.C. 20006	YES	NO	YES	ENG	MET	ENG	MET						**	***	***
Member P.C. Althen Staff James W. Barr															
American Academy of Pediatrics (AAP) 1801 Hinman Avenue Evanston, Illinois 60204															
American Alliance for Health, Physical Education, Recreation, and Dance (AAHPERD) 1900 Association Drive Reston, Virginia 22091															
American Association of Advertising Agencies (AAAA) 200 Park Avenue New York, New York 10017	NO	NO	NO	ENG		ENG									
Member None Listed Staff None Listed															

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ORGANIZATION	FORMAL POLICY	PROMOTION CONFERENCES	UNITS USED IN TECHNICAL PUBLICATIONS ENG MET DUAL	UNITS USED IN STANDARDS AND CODES ENG MET DUAL	ESTIMATED TIME FOR CONVERSION IN YEARS 0 10 25 50 OT	COMMENT	BIBLIO
American Association of Blood Banks (AABB) 1828 L. Street, N.W. Suite 608 Washington, D.C. 20036 Member None Listed Staff None Listed	NO	NO	MET	MET			
American Association of Cereal Chemists (AACCH) 3340 Pilot Knob Road St. Paul, Minnesota 55121 Member None Listed Staff Dr. A.E. Sloan	NO	NO	MET	DUAL	**		
American Association of Hides, Skins and Leather Merchants (AAHSL) Suite 302, 1629 K. Street, N.W. Washington, D.C. 20006 Member None Listed Staff None Listed	NO	NO	ENG	ENG	**		
American Association of Medical Milk Commissions, Inc. (AAMMC) P.O. Box 554, Route 3 Alpharetta, Georgia 30201							
The American Assoc. of Petroleum Geologists, Inc. (AAPG) 1444 South Boulder P.O. Box 979 Tulsa, Oklahoma 74101							
American Association of Poison Control Centers (AAPCC) Childrens Orthopedic Hospital P.O. Box C5371 Seattle, Washington 98105 Member None Listed Staff None Listed	NO	NO	MET	MET	**	***	

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ORGANIZATION	FORMAL POLICY	PROMOTION CONFER ENCES		UNITS USED IN TECHNICAL PUBLICATIONS		UNITS USED IN STANDARDS AND CODES		ESTIMATED TIME FOR CONVERSION IN YEARS						COMMENT	BIBLIO
		NO	NO	NO	NO	ENG	MET	DUAL	O	10	25	50	OT		
American Association of State Highway and Transportation Officials (AASHT) 444 North Capitol Street, N.W. Washington, D.C. 20001 Member None Listed Staff John Hewitt	NO	NO	NO			DUAL						**			
American Association of Textile Chemists and Colorists (AATCC) P.O. Box 12215 Research Triangle Park, North Carolina 27709 Member Ex Comm on Research Staff George Mandikos	NO	NO	NO			DUAL						**			
American Bankers Association (ABA) 1120 Connecticut Avenue, N.W. Washington, D.C. 20036															
American Bleached Shellac Manufacturers Assoc. (ABSM) Bradshaw-praeeger and Company 3248 West 47th Place Chicago, Illinois 60632															
American Boat and Yacht Council (ABYC) P.O. Box 806, 190 Ketcham Avenue Amityville, New York 11701 Member None Listed Staff G. James Lippmann	NO	NO	NO			DUAL							**	***	
American Bowling Congress (ABC) 5301 South 76th Street Greendale, Wisconsin 53129 Member None Listed Staff None Listed	NO	NO	NO	ENG				ENG					**		

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ORGANIZATION	FORMAL POLICY	PROMOTION CONFER ENCES		UNITS USED IN TECHNICAL PUBLICATIONS		UNITS USED IN STANDARDS AND CODES		ESTIMATED TIME FOR CONVERSION IN YEARS					COMMENT	BIBLIO	
		YES	NO	YES	NO	ENG	MET	DUAL	0	10	25	50			OT
American Bureau of Shipping (ABS) 65 Broadway New York, New York 10006 Member None Listed Staff William M. Hannan	YES	NO	YES					DUAL					**	***	
American Chemical Society (ACS) 1155 Sixteenth Street, N.W. Washington, D.C. 20036															
American Concrete Institute (ACI) P.O. Box 19150, Redford Station 22400 West Seven Mile Road Detroit, Michigan 48219 Member Clarkson W. Pinkham Staff Samuel J. Henry	YES	NO	NO					DUAL					**		...
American Concrete Paving Association (ACPA) 2625 Clearbrook Drive Arlington Heights, Il. 60005 Member None Listed Staff Herald J. Halm	NO	NO	NO					DUAL						**	...
American Conference of Governmental Industrial Hygienists (ACGIH) 2205 South Road Cincinnati, Ohio 45238 Member None Listed Staff W. D. Kelley	NO	NO	NO					DUAL						**	...
American Congress on Surveying and Mapping (ACSM) 210 Little Falls Street Falls Church, Virginia 22046 Member Metric Committee Staff None Listed	YES	YES	YES					ENG						**	...

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ORGANIZATION	FORMAL POLICY	CONFER ENCES	PROMOTION PUBLIC ATIONS	UNITS USED IN TECHNICAL PUBLICATIONS		UNITS USED IN STANDARDS AND CODES		ESTIMATED TIME FOR CONVERSION IN YEARS						COMMENT	BIBLIO
				ENG	MET	ENG	MET	0	10	25	50	OT			
American Crystallographic Association, Inc. (ACA) 335 East 45th Street New York, New York 10017	NO	NO	NO		MET		MET		**						
Member Apparatus & Stds. Comm. Staff None Listed															
American Dental Association (ADA) 211 East Chicago Avenue Chicago, Illinois 60611															
American Dry Milk Institute, Inc. (ADMI) 130 North Franklin Street Chicago, Illinois 60606	NO	NO	NO			DUAL	ENG		**						
Member None Listed Staff None Listed															
American Feed Manufact- urers Association, Inc. (AFMA) 1701 North Fort Myer Drive Arlington, Virginia 22209	NO	NO	NO		ENG		ENG		**						
Member None Listed Staff David Bossman															
American Fishing Tackle Mfg. Assoc. (AFTMA) 2625 Clearbrook Drive Arlington Heights, Il. 60005															
American Footwear Industries Association, Inc. (AFIA) 1611 North Kent Street Arlington, Virginia 22209															

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ORGANIZATION	FORMAL POLICY	PROMOTION		UNITS USED IN TECHNICAL PUBLICATIONS		UNITS USED IN STANDARDS AND CODES		ESTIMATED TIME FOR CONVERSION IN YEARS						COMMENT	BIBLIO	
		CONFER ENCES	ATIONS	ENG	MET	DUAL	ENG	MET	DUAL	0	10	25	50			OT
American Foundrymen's Society (AFS) Golf and Wolf Roads Des Plaines, Illinois 60016 Member None Listed Staff AFS Technical Council	NO	NO	NO		ENG										***	
American Gear Manufacturers Association (AGMA) 1901 North Fort Myer Drive Suite 1000 Arlington, Virginia 22209 Member None Listed Staff None Listed	NO	NO	NO		ENG		ENG							**		
American Gem Society (AGS) 2960 Wilshire Boulevard Los Angeles, California 90010																
American Hardboard Association (AHA) 887-B Wilmette Road Palatine, Illinois 60068 Member None Listed Staff James E. Nolan	NO	NO	NO		ENG		ENG							**	***	
American Heart Association (AMHA) 7320 Greenville Avenue Dallas, Texas 75231 Member None Listed Staff None Listed	NO	NO	NO			DUAL			DUAL				**			
American Home Lighting Institute (AHLI) 230 North Michigan Avenue Chicago, Illinois 60601 Member None Listed Staff T. David McFarland	NO	NO	NO		ENG								**		***	

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				ENG	MET	ENG	MET	0	10	25	50	OT		
American Hospital Association (AHA) 840 North Lake Shore Drive Chicago, Illinois 60611 Member None Listed Staff Mark Goodhart	NO	NO	NO		DUAL							---	---	
American Industrial Hygiene Association (AIHA) 475 Wolf Ledges Parkway Akron, Ohio 44311 Member None Listed Staff None Listed	NO	NO	NO		MET	DUAL						---	---	
American Institute of Architects (AIA) 1735 New York Avenue, N.W. Washington, D.C. 20006 Member None Listed Staff Dale Ellickson	YES	NO	YES		DUAL							---	---	
American Institute of Chemical Engineers (AIChE) 345 East 47th Street New York, New York 10017 Member None Listed Staff L. Resen	YES	NO	NO		MET	DUAL							---	
American Institute of Steel Construction, Inc. (AISC) 400 N. Michigan Avenue Eighth Floor Chicago, Illinois 60611 Member None Listed Staff None Listed	NO	NO	NO		ENG								---	
American Institute of Timber Construction (AITC) 333 West Hampden Avenue Englewood, Colorado 80110 Member None Listed Staff Thomas E. Brassel	NO	NO	NO		ENG								ENG	

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						0	10	25	50	OT			
American Insurance Assoc. (AIA) 85 John Street New York, New York 10038													
American Iron and Steel Institute (AISI) 1000 Sixteenth Street, N.W. Washington, D.C. 20036	YES	NO	NO	ENG							..	...	
Member Metric Planning Comm. Staff William C. Benzer													
American Leather Chemists Association (ALCA) Tanners Council Research Lab. University of Cincinnati Cincinnati, Ohio 45221 Member None Listed Staff None Listed	YES	NO	NO	DUAL							**	...	
American Library Assoc. (ALA) 50 East Huron Street Chicago, Illinois 60611	NO	NO	NO								**	...	
Member None Listed Staff None Listed													
American National Standards Institute, Inc. (ANSI) 1430 Broadway New York, New York 10018	YES	NO	NO	ENG MET DUAL								...	
Member None Listed Staff Technical Staff													
American Nuclear Society, Inc. (ANS) 555 North Kensington Avenue La Grange Park, Ill. 60525	YES	NO	NO	DUAL							DUAL ..		...
Member ANS Publ. Comm. Staff W. Michael Diekman													

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The American Oil Chemists Society (ADCS) 508 South Sixth Street Champaign, Illinois 61820	NO	NO	NO	DUAL	**	***	
Member None Listed Staff None Listed							
American Paper Institute, Inc. (API) 260 Madison Avenue New York, New York 10016							
American Petroleum Institute (API) 2101 L Street, N.W. Washington, D.C. 20037	YES	NO	YES	ENG		***	
Member N.D. Babic Staff S.M. Goss							
American Pharmaceutical Association (APHA) 2215 Constitution Avenue, N.W. Washington, D.C. 20037	YES	NO	YES	MET	**	***	***
Member None Listed Staff Pharmacy Intelligence							
American Plywood Association (APA) P.O. Box 11700 Tacoma, Washington 98411	NO	NO	NO	ENG		***	
Member None Listed Staff Thomas R. Flint							
American Public Health Assoc., Inc. (APHA) 1015 Fifteenth Street, N.W. Washington, D.C. 20005							

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					0	10	25	50	OT		
American Public Works Association (APWA) 1313 East 60th Street Chicago, Illinois 60637	NO	NO	NO	DUAL			**				
Member David Vargas Staff Rod Fleming											
American Railway Engineering Association (AREA) 59 East Van Buren Street Chicago, Illinois 60605	NO	NO	YES	ENG			**			...	
Member Lewis T. Cerny Staff None Listed											
The American Society for Nondestructive Testing. 3200 Riverside Drive Columbus, Ohio 43221 Box 5642											
American Society for Quality Control, Inc. (ASQC) 161 West Wisconsin Avenue Milwaukee, Wisconsin 53203	NO	NO	NO	DUAL					**	...	
Member None Listed Staff None Listed											
American Society for Testing and Materials (ASTM) 1916 Race Street Philadelphia, Pa. 19103	YES	YES	YES	MET DUAL			**			...	...
Member Committee E-43 Staff W.E. Hulise/R.P. Lukens											
American Society of Agricultural Engineers (ASAE) P.O. Box 410, 2950 Niles Road St. Joseph, Michigan 49085	YES	NO	YES	DUAL			**				...
Member Metric Coord. Comm. Staff Russell Hahn											

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American Society of Brewing Chemists (ASBC) 3340 Pilot Knob Road St. Paul, Minnesota 55121							
American Society of Cinematographers (ASC) 1782 North Orange Drive Hollywood, California 90028	NO	NO	NO		**		
Member Board of Directors Staff None Listed							
American Society of Electroplated Plastics, Inc. (ASEP) 1000 Vermont Avenue, N.W. Washington, D.C. 20005							
American Society of Enologists P.O. Box 411 Davis, California 95616	NO	NO	NO	DUAL			
Member None Listed Staff None Listed							
American Society of Heating, Refrigerating and Air-Conditioning Engineers, 345 East 47th Street New York, New York 10017	YES	YES	YES	DUAL	**		***
Member Metric Committee Staff Oliver K. Lewis							
American Society of Lubrication Engineers (ASLE) 838 Busse Highway Park Ridge, Illinois 60068							

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ORGANIZATION	FORMAL POLICY	PROMOTION		UNITS USED IN TECHNICAL PUBLICATIONS		UNITS USED IN STANDARDS AND CODES		ESTIMATED TIME FOR CONVERSION IN YEARS					COMMENT	BIBLIO
		CONFER ENCES	ATIONS	ENG MET	DUAL	ENG MET	DUAL	0	10	25	50	OT		
The American Society of Mechanical Engineers, 345 East 47th Street New York, New York 10017	YES	NO	YES	ENG MET	DUAL	ENG MET	DUAL							...
Member Board on Metrification Staff Kent Wessely														
American Society of Photogrammetry (ASP) 105 North Virginia Avenue Falls Church, Virginia 22046														
American Society of Sanitary Engineering (ASSE) P.O. Box 9712 Bay Village, Ohio 44140	NO	NO	NO		DUAL		DUAL							
Member Metric Committee Staff None Listed														
American Sod Producers Association (ASPA) Association Building Ninth and Minnesota Hastings, Nebraska 68901														
American Speech-Language and Hearing Association (ASLHA) 10801 Rockville Pike Rockville, Maryland 20852	NO	NO	NO	ENG		ENG				..				
Member R. Malone Staff None Listed														
American Spice Trade Assoc. (ASTA) P.O. Box 1267 580 Sylvan Avenue Englewood Cliffs, New Jersey 07632	YES	NO	NO		DUAL		ENG						...	
Member None Listed Staff None Listed														

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American Stone Importers Association Inc. (ASIA) 1271 Avenue of the Americas 6th Floor New York, New York 10020							
American Textile Machinery Association (ATMA) 1730 M Street, N.W. Washington, D.C. 20036	YES	NO	NO	ENG		***	***
Member John Clunie Staff Diane Boulavsky							
American Textile Manufacturers Institute, Inc. (ATMI) 1101 Connecticut Avenue, N.W. Suite 300 Washington, D.C. 20036							
American Trucking Associations Inc. (ATTA) 1616 P. Street N.W. Washington, D.C. 20036	NO	NO	NO	ENG	..	***	
Member None Listed Staff Nat'l Classification							
American Vacuum Society (AVS) 335 East 45th Street New York, New York 10017	NO	NO	NO	DUAL	..	***	
Member Standards Comm. Staff None Listed							
American Water Works Assoc. Inc. (AWWA) 6666 West Quincy Avenue Denver, Colorado 80235	NO	NO	NO	DUAL		***	
Member Robert J. Baker Staff George L. Craft							

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			ENG	MET DUAL	ENG	MET DUAL	0	10	25	50	OT		
American Wax Importers and Refiners Association, Inc. (AWIRA) c/o Frank B. Ross, Inc. 6 Ash Street Jersey City, New Jersey 07304													
American Welding Society, Inc. (AWS) 2501 Northwest Seventh Street Miami, Florida 33125													
American Wood-Preservers' Assoc. (AWPA) 7735 Old Georgetown Road Suite 4444 Bethesda, Maryland 20014													
American Wood Preservers Bureau (AWPB) P.O. Box 6085 2772 South Randolph Street Arlington, Virginia 22206 Member None Listed Staff None Listed												***	
Anti-Friction Bearing Manufacturers Association, Inc. (AFBMA) 2341 Jefferson Davis Highway Suite 1015 Member Engineering Comm. Staff President	YES	NO	NO	DUAL		DUAL		**				***	
Archery Manufacturers Organization (AMO) 200 Castlewood Road North Palm Beach, Florida 33408 Member None Listed Staff Eugene R. Jones	NO	NO	NO	DUAL	ENG			**				***	

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ORGANIZATION	FORMAL POLICY ENFORCEMENTS	PROMOTION CONFERENCES	UNITS USED IN TECHNICAL PUBLICATIONS ENG MET DUAL	UNITS USED IN STANDARDS AND CODES ENG MET DUAL	ESTIMATED TIME FOR CONVERSION IN YEARS						COMMENT	BIBLIO
					0	10	25	50	OT			
Architectural Aluminum Manufacturers Assoc. (AAMA) 35 East Wacker Drive Chicago, Illinois 60601  Member None Listed Staff John Gurniak	NO	NO	NO	ENG			**					
Architectural Woodwork Institute (AWI) 2310 South Walter Reed Drive Arlington, Virginia 22206  Member None Listed Staff W. H. Winter	NO	NO	NO	ENG	ENG			**		***		
Asbestos Information Assoc./ North America (AIANA) 1745 Jefferson Davis Highway Crystal Square 4, Suite 509 Arlington, Virginia 22202 Member None Listed Staff None Listed	NO	NO	NO									
Asbestos Textile Institute. Inc. (ATI) P.O. Box 224 Hatboro, Pennsylvania 19040  Member None Listed Staff None Listed										***		
Asphalt Emulsion Manufacturers Association (AEMA) 1000 Vermont Avenue, N.W. Washington, D.C. 20005  Member Harold Muncy Staff None Listed	NO	NO	NO	DUAL	DUAL		**			***		
The Asphalt Institute (AI) Asphalt Institute Building College Park, Maryland 20740  Member None Listed Staff James A. Burton	YES	NO	YES	DUAL		DUAL				***	***	

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		CONFER ENCES	ATIONS	ENG	MET DUAL	ENG	MET DUAL	O	10	25	50	OT			
Asphalt Roofing Manufacturers Association (ARMA) 1800 Massachusetts Avenue, N.W. Suite 702 Washington, D.C. 20036 Member None Listed Staff Richard D. Snyder	NO	NO	NO	ENG		ENG						**		***	
Associated Air Balance Council (AABC) 1000 Vermont Avenue, N.W. Room 1200 Washington, D.C. 20005															
The Assoc. Cooperaage Indus. of America, Inc. (ACIA) 2100 Gardiner Lane, Suite 100-E Louisville, Kentucky 40205 Member George W. Ebeling Staff None Listed	NO	YES	NO	ENG		ENG								***	
Associated General Contractors of America (AGCA) 1957 E Street, N.W. Washington, D.C. 20006 Member None Listed Staff Christopher S. Monek	YES	NO	NO									**		***	***
Associated Locksmiths of America, Inc. (ALOA) 3003 Live Oak Street Dallas, Texas 75204															
Assoc. for the Advancement of Medical Instrumentation (AAMI) 1901 North Fort Myer Drive, Arlington, Virginia 22209															

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ORGANIZATION	FORMAL POLICY	PROMOTION CONFER ENCES	UNITS USED IN TECHNICAL PUBLICATIONS ENG MET DUAL	UNITS USED IN STANDARDS AND CODES ENG MET DUAL	ESTIMATED TIME FOR CONVERSION IN YEARS 0 10 25 50 OT	COMMENT	BIBLIO
Association of American Feed Control Officials, Inc. (AAFCO) P. O. Box 3160 College Station, Texas 77840							
Association of American Railroads (AAR) 1920 L Street, N.W. Washington, D.C. 20036	NO	NO	NO	ENG		**	
Member Conan P. Furber Staff None Listed							
Assoc. of Bedding and Furniture Law Officials (ABFLO) Dept. of Consumer Protection 165 Capitol Avenue Hartford, Connecticut 06115 Member None Listed Staff None Listed	NO			MET		***	
Association of Edison Illuminating Companies 51 East 42nd Street New York, New York 10017	NO	NO	NO	DUAL			
Member None Listed Staff None Listed							
Association of Home Appliance Manufacturers (AHAM) 20 North Wacker Drive Chicago, Illinois 60606	YES	NO	YES	DUAL ENG			***
Member None Listed Staff Herbert Phillips							
Association of Iron and Steel Engineers (AISE) Three Gateway Center, Suite 2350 Pittsburgh, Pa. 15222							

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Association of Official Analytical Chemists 1111 North 19th Street Arlington, Virginia 22209							
Association of Official Seed Analysts (AOSA) Mississippi State University Box 5425 Mississippi State, MS 39762 Member None Listed Staff None Listed	NO	NO	NO	MET DUAL	**	***	
Association of Petroleum Re-Refiners (APR) 2025 Pennsylvania Ave. N.W. Suite 1111 Washington, D.C. 20006 Member None Listed Staff None Listed	NO	NO	NO				
Association of the Wall and Ceilings Industries International (AWCI) 1711 Connecticut Avenue, N.W. Washington, D.C. 20009 Member None Listed Staff Gene Erwin	NO	NO	NO	ENG	**		
Audio Engineering Society, Inc. (AES) 60 East 42nd Street, Room 2520 New York, New York 10017 Member J.G. McKnight Staff Patricia MacDonald	YES	NO	NO	MET DUAL	**	***	
Automated Storage/Retrieval Systems Association (ASRSA) c/o The Material Handling Inst. 1326 Freeport Road Pittsburgh, Pa. 15238 Member None Listed Staff None Listed	NO	NO	NO				

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		CONFER ENCES	PUBLIC ATIONS	ENG MET	DUAL	ENG MET	DUAL	0	10	25	50	OT		
Baking Industry Sanitation Standards Committee (BISSC) 521 Fifth Avenue New York, New York 10017														
Barley and Malt Institute (BAMI) P.O. Box 308 Crystal Lake, Illinois 60014 Member None Listed Staff Kirk Miller	NO	NO	NO	ENG					**					
Barre Granite Association, Inc. (BGA) 51 Church Street Barre, Vermont 05641 Member None Listed Staff None Listed	NO	NO	NO	ENG									***	
Battery Council International (BCI) 111 East Wacker Drive Chicago, Illinois 60601 Member None Listed Staff None Listed	NO	NO	NO	ENG		ENG								
Billiard Congress of America (BCA) 717 North Michigan Avenue Chicago, Illinois 60611 Member None Listed Staff Specifications Commit	NO	NO	NO	ENG		ENG			**					
Biological Stain Commission Department of Bio-Chemistry Box 607 Univ. of Rochester Med. Cntr. Rochester, New York 14642 Member Elmer H. Stotz Staff None Listed	NO	NO	NO	MET		MET			**				***	

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		ENG	MET	DUAL	ENG	MET	DUAL	0	10	25	50	OT			
Book Manufacturers Institute. Inc. (BMI) 111 Prospect Street Stamford, Connecticut 06901  Member Mfg. and Stnd. Com. Staff Douglas E. Horner	NO	NO	NO	ENG			ENG							***	
Brick Institute of America (BIA) 1750 Old Meadow Road McLean, Virginia 22102  Member Eng. & Res. Comm. Staff Alan H. Yorkdale	NO	NO	NO		DUAL			DUAL					**		
Builders Hardware Manufacturers Association (BHMA) 60 East 42nd Street New York, New York 10017  Member None Listed Staff R.A. Hudnut	NO	NO	NO		DUAL			DUAL				**			
Building Officials and Code Administrators International, Inc. (BOCA) 17926 South Halsted Street Homewood, Illinois 60430 Member Paul K. Hellstedt Staff None Listed	NO	NO	NO		DUAL			DUAL			**				
Building Owners and Managers Assoc. Intl. (BOMA) 1221 Massachusetts Avenue, NW Washington, D.C. 20005															
California Lathing and Plastering Contractors Assoc., Inc. (CLPCA) 9911 Inglewood Avenue Inglewood, California 90301 Member None Listed Staff None Listed	NO	NO	NO	ENG			ENG						**		

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		CONFER ENCES	PUBLIC ATIONS	ENG	MET	DUAL	ENG	MET	DUAL	0	10	25	50		
Can Manufacturers Institute (CMI) 1625 Massachusetts Avenue, N.W. Washington, D.C. 20036 Member None Listed Staff Maureen Jones	NO	NO	NO	ENG			ENG								
Cast Bronze Bearing Institute, Inc. (CBBI) 221 North La Salle Street Chicago, Illinois 60601															
Cast Iron Soil Pipe Institute (CISPI) 1499 Chain Bridge Road Suite 203 McLean, Virginia 22101 Member None Listed Staff Lewis W. Thomas III	NO	NO	NO	ENG			ENG							***	
Caster and Floor Truck Manufacturers Assoc. (CFTMA) 1717 Howard Street Evanston, Illinois 60202 Member None Listed Staff None Listed	NO	NO	NO	ENG			ENG						**	***	
Ceilings and Interior Systems Contractors Association (CISCA) 1800 Pickwick Avenue Glenview, Illinois 60025															
Cellulose Manufacturers' Assoc. (CMA) P.O. BOX 4045 Falls Church, Virginia 22044 Member None Listed Staff None Listed	NO	NO	NO	ENG			ENG							**	

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				ENG	MET	DUAL	ENG	MET	DUAL	0	10	25	50	OT			
Chain Link Fence Manufacturers Institute (CLFMI) 1101 Connecticut Avenue, N.W. Suite 700 Washington, D.C. 20036																	
Chain Saw Manufacturers Association (CSMA) 1015 18th Street, N.W. Suite 403 Washington, D.C. 20036																	
Chemical Fabrics and Film Association (CFFA) 1230 Keith Building Cleveland, Ohio 44115 Member Norris Post Staff Frank Akstens	NO	NO	NO	NO	ENG		ENG					**					
Chemical Specialties Mfg. Assoc. Inc. (CSMA) 1001 Connecticut Avenue, N.W. Suite 1120 Washington, D.C. 20036 Member Paul Duggan Staff D. Douglas Fratz	YES	NO	NO	NO	DUAL		DUAL					**				***	
Chlorine Institute, Inc. (CI) 342 Madison Avenue New York, New York 10017 Member None Listed Staff Robert L. Mitchell Jr	NO	NO	NO	NO	ENG		ENG					**			***		
College of American Pathologists (CAP) 7400 North Skokie Blvd. Skokie, Illinois 60077 Member Dr. Tyra T. Hutchens Staff None Listed	YES	YES	NO	NO	DUAL		DUAL					**				***	

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				ENG	MET	DUAL	ENG	MET	DUAL	0	10	25	50		
Commercial Refrigerator Manufacturers Association (CRMA) 1101 Connecticut Avenue, N.W. Suite 700 Washington, D.C. 20036															
Composite Can and Tube Institute (CCTI) 1800 M Street, N.W. Washington, D.C. 20036	YES	NO	NO			DUAL			DUAL				**		***
Member Technical Comm. Staff None Listed															
Compressed Air and Gas Institute (CAGI) 1230 Keith Building 1621 Euclid Avenue Cleveland, Ohio 44115 Member C.L. Metzger Staff John Addington	YES	NO	YES	ENG			ENG					**			
Compressed Gas Association, Inc. (CGA) 500 Fifth Avenue New York, New York 10036	YES	NO	YES	ENG			ENG						**		***
Member Metrification Comm. Staff Staff															
Computer Aided Manufacturing International Inc., (CAMI) Suite 1107 611 Ryan Plaza Drive Arlington, Texas 76011															
Concrete Reinforcing Steel Institute, Inc. (CRSI) 180 North La Salle Street, Room 2110 Chicago, Illinois 60601 Member Paul F. Rice Staff None Listed	NO	NO	YES	ENG			ENG						**		***

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		CONFER ENCES	PUBLIC ATIONS	ENG MET DUAL	ENG MET DUAL	ENG MET DUAL	ENG MET DUAL	0	10	25	50	OT		
Concrete Sawing and Drilling Association (CSDA) 59 East Main Street Moorestown, New Jersey 08057	NO	NO	NO	ENG				**						
Member None Listed Staff None Listed														
Construction Industry Manufacturers Assoc. (CIMA) 111 East Wisconsin Avenue Marine Plaza 1700 Milwaukee, Wisconsin 53202	NO	NO	NO		DUAL		DUAL			**			***	
Member None Listed Staff William E. Miller														
The Construction Specifications Institute (CSI) 1150 17th Street, N.W. Suite 300 Washington, D.C. 20036														
Contractors Pump Bureau (CPB) 13975 Connecticut Avenue Suite 205 Silver Spring, Maryland 20906	NO	NO	NO		DUAL		DUAL			**				
Member None Listed Staff Walter Anderson														
Conveyor Equipment Manufacturers Assoc. (CEMA) 1000 Vermont Avenue, N.W. Washington, D.C. 20005	NO	NO	NO	ENG		ENG		**						
Member Arthur R. Geberlin Staff None Listed														
Cooling Tower Institute (CTI) 9030 North Freeway, No. 216 Houston, Texas 77037	NO	NO	NO	ENG		ENG						**		
Member B.B. Brand Staff None Listed														

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				ENG	MET DUAL	ENG	MET DUAL	O	10	25	50	OT		
Copper Development Association, Inc. (CDA) 57th Floor, Chrysler Building 405 Lexington Avenue New York, New York 10017 Member Arthur Cohen Staff None Listed	NO	NO	NO		DUAL		DUAL					**	***	
Cordage Institute (CI) 1625 Massachusetts Avenue, N.W. Suite 610 Washington, D.C. 20036 Member None Listed Staff Catherine Wilson	YES	NO	NO	ENG	DUAL	ENG			**				***	
Corn Refiners Association, Inc. (CRA) 1001 Connecticut Avenue, N.W. Washington, D.C. 20036 Member None Listed Staff None Listed	NO	NO	NO		DUAL		DUAL			**				
Cosmetic, Toiletry and Fragrance Association, Inc. (CTFA) 1133 15th Street, N.W. Washington, D.C. 20005 Member None Listed Staff None Listed	NO	NO	NO	ENG		ENG							***	
Crane Manufacturers Association of America, Inc. (CMAA) 1326 Freeport Road Pittsburgh, Pa. 15238 Member None Listed Staff Thomas W. Shea	NO	NO	NO	ENG		ENG			**					
Cultured Marble Institute (CMI) 435 North Michigan Avenue Suite 1717 Chicago, Illinois 60611 Member None Listed Staff T. David McFarland	NO	NO	NO		DUAL		DUAL			**				

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Dairy and Food Industries Supply Assoc., Inc. (DFISA) 5530 Wisconsin Avenue Room 1050 Washington, D.C. 20015 Member Comm. on Metric Prac. Staff None Listed	YES	NO	NO	ENG			***
Diamond Core Drill Manufacturers Assoc. (DCDMA) 59 East Main Street Moorestown, New Jersey 08057 Member None Listed Staff None Listed	NO	NO	NO	DUAL		***	
Diaper Service Accreditation Council (DSAC) 2017 Walnut Street Philadelphia, Pa. 19103							
Diesel Engine Manufacturers Association (DEMA) 712 Lakewood Center North Cleveland, Ohio 44107 Member None Listed Staff None Listed	NO	NO	NO	ENG		**	
Door and Hardware Institute (DHI) 1815 North Fort Myer Drive Suite 412 Arlington, Virginia 22209 Member None Listed Staff Mary Roth	NO	NO	NO	DUAL		DUAL	**
Door Operator and Remote Controls Mfg. Assoc. (DORCMA) 655 Irving Park Suite 201 Park Place Chicago, Illinois 60613 Member None Listed Staff Executive Director	NO	NO	NO	ENG		ENG	

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				ENG	MET DUAL	ENG	MET DUAL	0	10	25	50	OT			
Dry Color Manufacturers Association (DCMA) 1117 North 19th Street Suite 100 Arlington, Virginia 22209 Member None Listed Staff None Listed	NO	NO	NO										***		
Electrical Apparatus Service Association, Inc. (EASA) 1331 Baur Boulevard St. Louis, Missouri 63132 Member None Listed Staff David L. Gebhart	NO	NO	NO	ENG	DUAL	ENG							***		
Electrical Generating Systems Marketing Association (EGSMA) 435 North Michigan Avenue 17th Floor Chicago, Illinois 60611 Member None Listed Staff None Listed	NO	NO	NO									**			
Electronic Industries Association (EIA) 2001 Eye Street, N.W. Washington, D.C. 20006															
Entomological Society of America (ESA) 4603 Calvert Road, Box AJ College Park, Maryland 20740															
Equipment and Tool Institute (ETI) 1545 Waukegan Road Glenview, Illinois 60025															

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Essential Oil Association of the U.S.A., Inc. (EOA) 60 East 42nd Street New York, New York 10017							
Expanded Shale, Clay and Slate Institute (ESCSI) 4905 Del Ray Avenue Suite 210 Bethesda, Maryland 20014 Member None Listed Staff Harry C. Robinson	NO	NO	NO	DUAL	**		
Expansion Anchor Manufacturers Institute (EAMI) 707 Westchester Avenue Suite 110 White Plains, New York 10604							
Expansion Joint Manufacturers Association (EJMA) 707 Westchester Avenue Suite 110 White Plains, New York 10604 Member None Listed Staff None Listed	NO	NO	NO	ENG		**	
Facing Tile Institute (FTI) Box 8880 Canton, Ohio 44711	NO	NO	NO	ENG		**	...
Member Carl J. Deimling Staff None Listed							
Factory Mutual System (FMS) 1151 Boston-Providence Turnpike Norwood, Massachusetts 02062	NO	NO	YES	DUAL		**	
Member William S. Marsh Staff None Listed							

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		CONFER	ENCES	ATIONS	ENG	MET	DUAL	0	10	25	50	OT		
The Fertilizer Institute (FI) 1015 18th Street, NW Washington, D.C. 20036	NO	NO	NO	NO	ENG									
Member W.C. White Staff None Listed														
Fibre Box Association (FBA) 5725 North East River Road Chicago, Illinois 60631	NO	NO	NO	NO	DUAL						**			
Member None Listed Staff A.W. Hoffman														
Financial Accounting Standards Board (FASB) High Ridge Park Stamford, Connecticut 06905													***	
Member None Listed Staff None Listed														
Fir and Hemlock Door Association (FHDA) Yeon Building Portland, Oregon 97204	NO	NO	NO	NO										
Member None Listed Staff None Listed														
Fireplace Institute (FI) (Woodheating Alliance) 111 East Wacker Drive Suite 600 Chicago, Illinois 60601														
Flat Glass Marketing Association (FGMA) White Lakes Professional Bldg. 3310 Harrison Street Topeka, Kansas 66611 Member None Listed Staff None Listed	NO	NO	NO	NO	ENG							**		

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		CONFER ENCES	PUBLIC ATIONS	ENG	MET DUAL	ENG	MET DUAL	0	10	25	50	OT		
Flexible Packaging Association (FPA) 12025 Shaker Blvd. Cleveland, Ohio 44120														
Fluid Controls Institute, Inc. (FCI) P. O. Box 3854 Tequesta, Florida 33458	NO	NO	NO	ENG		ENG						**	***	
Member None Listed Staff Robert D. Thompson														
Food Marketing Institute (FMI) 1750 K Street, N.W., Suite 700 Washington, D.C. 20006														
Forging Industry Assoc. (FIA) 1121 Illuminating Building 55 Public Square Cleveland, Ohio 44113	NO	YES	NO		DUAL		DUAL			**			***	
Member None Listed Staff Alex G. Clanke														
Gas Processors Association (GPA) 1812 First Place Tulsa, Oklahoma 74103	NO	NO	YES	ENG		ENG						**		
Member None Listed Staff R. E. Cannon														
General Aviation Manufacturers Association (GAMA) 1025 Connecticut Avenue, N.W. Suite 517 Washington, D.C. 20036														

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Glass Tempering Association (GTA) White Lakes Professional Bldg. 3310 Harrison Street Topeka, Kansas 66611							
Gravure Technical Assoc. (GTA) 60 East 42nd Street New York, New York 10017							
Grocery Manufacturers of America, Inc. (GMA) 1010 Wisconsin Avenue, N.W. Suite 800 Washington, D.C. 20007							
Gummed Industries Associates Inc. (GIA) 380 North Broadway Jericho, New York 11753	NO	YES	NO	DUAL	DUAL		
Member R.W. McKellar Staff None Listed							
Gypsum Association (GA) 1603 Orrington Avenue Suite 1210 Evanston, Illinois 60201	YES	NO	NO	ENG	ENG	...	...
Member R.P. Entz Staff H.B. Carlsen							
Gypsum Roof Deck Foundation (GRDF) 221 North LaSalle Street Room 2026 Chicago, Illinois 60601							

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				ENG	MET	DUAL	ENG	MET	DUAL	O	10	25	50			OT
Hand Tools Institute (HTI) 707 Westchester Avenue White Plains, New York 10604  Member None Listed Staff Robert M. Byrne	NO	NO	NO	ENG <td>MET</td> <td>DUAL</td> <td>ENG<td>MET</td><td>DUAL</td><td></td><td></td><td></td><td></td><td>..</td><td>...</td><td></td></td>	MET	DUAL	ENG <td>MET</td> <td>DUAL</td> <td></td> <td></td> <td></td> <td></td> <td>..</td> <td>...</td> <td></td>	MET	DUAL					..	...	
Hardwood Dimension Manufacturers Association, Inc. (HDMA) 3813 Hillsboro Road Box 15721 Nashville, Tennessee 37215 Member None Listed Staff None Listed	NO	NO	NO	ENG			ENG							..	...	
Hardwood Plywood Manufacturers Association (HPMA) 1825 Michael Faraday Drive Box 2789 Reston, Virginia 22090 Member None Listed Staff Clark E. McDonald	NO	NO	NO	ENG <td>MET</td> <td></td> <td></td> <td></td> <td>DUAL</td> <td></td> <td></td> <td></td> <td></td> <td>..</td> <td>...</td> <td></td>	MET				DUAL					..	...	
Heat Exchange Institute (HEI) 1230 Keith Building 1621 Euclid Avenue Cleveland, Ohio 44115																
Holst Manufacturers Institute (HMI) 1326 Freeport Road Pittsburgh, PA 15238  Member None Listed Staff L.W. Shea	NO	NO	NO			DUAL			DUAL							
Home Ventilating Institute (HVI) 4300-L Lincoln Avenue Rolling Meadows, Illinois 60008  Member None Listed Staff James Prunty	NO	NO	NO	ENG			ENG						..			

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						0	10	25	50	OT			
Hydraulic Institute (HI) 712 Lakewood Center North 14600 Detroit Avenue Cleveland, Ohio 44107	NO	NO	NO	ENG	ENG		**						
Member Metric Subcommittee Staff R.H. Ecker													
The Hydrionics Institute, (HI) 35 Russo Place Berkeley Heights, NJ 07922	NO	NO	NO	ENG	ENG		**						
Member None Listed Staff John Woodworth													
Illuminating Engineering Society of North America (IES) 345 East 47th Street New York, New York 10017	YES	NO	YES	DUAL	DUAL		**				***		***
Member None Listed Staff John E. Kaufman													
Inda. (The Association of the Nonwoven Fabrics Industry) 10 East 40th Street New York, New York 10016	NO	NO	NO	DUAL	DUAL		**						
Member Stnd. Test Meth. Com. Staff Gerald A. McFarren													
Indiana Limestone Institute of America, Inc. (ILIA) Stone City Bank Building Suite 400 Bedford, Indiana 47421													
Industrial Fabrics Association International, (IFAI) 350 Endicott Building St. Paul, Minnesota 55101	NO	NO	NO	ENG			**						
Member None Listed Staff Stephen M. Warner													

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			TECHNICAL PUBLICATIONS	ENG MET DUAL	STANDARDS AND CODES	ENG MET DUAL	0	10	25	50	OT		
Indus. Fasteners Inst. (IFI) 1505 East Ohio Building Cleveland, Ohio 44114													
Industrial Gas Cleaning, Inc. (IGCI) 700 North Fairfax Street Suite 304 Alexandria, Virginia 22314													
Industrial Perforators Assoc., Inc. (IPA) 710 North Plankinton Suite 333 Milwaukee, Wisconsin 53203													
Industrial Silencer Manufacturers Assoc. (ISMA) Donaldson Company, Inc. P.O. Box 1299 Molles, Minnesota 55440													
Institute for Interconnecting and Packaging Electronic Circuits (IPC) 3451 Church Street Skokie, Illinois 60203 Member None Listed Staff Dieter Bergman	NO	NO	NO	DUAL	DUAL			**				***	***
The Institute of Electrical and Electronics Engineers, Inc. (IEEE) 345 East 47th Street New York, New York 10017													

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Institute of Environmental Sciences (IES) 940 East Northwest Highway Mount Prospect, IL 60056							
Institute of Makers of Explosives (IME) 420 Lexington Avenue New York, New York 10017							
Institute of Scrap Iron and Steel, Inc. (ISIS) 1627 K Street, N.W. Suite 700 Washington, D.C. 20006 Member None Listed Staff None Listed						***	
Institute of Transportation Engineers (ITE) 525 School Street, S.W. Suite 410 Washington, D.C. 20024							
Instrument Society of America (ISA) 67 Alexander Drive P.O. Box 12277 Research Triangle Pk., NC 27709							
Insulated Cable Engineers Association (ICEA) P.O. Box P South Yarmouth, Ma. 02554 Member R.E. Delp Staff None Listed	NO	NO	NO	DUAL	**	***	

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Insulated Steel Door Systems Institute (ISDSI) 712 Lakewood Center North Cleveland, Ohio 44107 Member None Listed Staff None Listed	NO	NO	NO	DUAL			
International Air Transport Association (IATA) 500 Fifth Avenue New York, New York 10036							
Intl. Assoc. of Geophysical Contractors (IAGC) 5335 West 48th Avenue Suite 400 Denver, Colorado 80212 Member None Listed Staff President	NO	NO	NO			***	
International Association of Plumbing and Mechanical Officials (IAPMO) 5032 Alhambra Avenue Los Angeles, California 90032 Member None Listed Staff John Meacham	NO	NO	NO	DUAL		**	
International Association of Wiping Cloth Manufacturers 300 W. Washington Street Chicago, Illinois 60606 Member None Listed Staff Robert J. Mayer	NO	NO	NO	ENG		**	
Int. Comm. on Radiation Units and Measurements (ICRU) 7910 Woodmont Avenue Suite 1016 Washington, D.C. 20014 Member H.O. Wyckoff Staff None Listed	NO	NO	NO	MET		**	

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ORGANIZATION	FORMAL POLICY	CONFER ENCES	PROMOTION PUBLIC ATIONS	UNITS USED IN TECHNICAL PUBLICATIONS ENG MET DUAL	UNITS USED IN STANDARDS AND CODES ENG MET DUAL	ESTIMATED TIME FOR CONVERSION IN YEARS						COMMENT	BIBLIO
						0	10	25	50	OT			
International Conference of Building Officials (ICBO) 5360 South Workman Mill Road Whittier, California 90601 Member None Listed Staff D R. Watson	YES	NO	NO	ENG	ENG		**					***	
International Fabricare Institute (IFI) 12251 Technical Road Silver Spring, Maryland 20904	NO	NO	NO	DUAL			**						
Member None Listed Staff A.C. Lloyd													
International Institute of Ammonia Refrigeration (IIR) 111 East Wacker Drive Chicago, Illinois 60601 Member None Listed Staff None Listed	NO	NO	NO	DUAL	DUAL								
International Masonry Institute 823 Fifteenth Street, N.W. Suite 1001 Washington, D.C. 20005 Member None Listed Staff R.J. Belner	NO	NO	NO	DUAL						**		***	
International Mobile Air Conditioning Assoc., Inc. (IMACA) P.O. Box 567 Lansdale, Pennsylvania 19446 Member None Listed Staff None Listed	NO	NO	NO	DUAL	DUAL		**						
International Municipal Signal Association (IMSA) P.O. Box 8249 Fort Worth, Texas 76112													

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International Silo Association, Inc. (ISA) One Corporate Place, Suite 375 1501 42nd Street West Des Moines, Iowa 50265 Member None Listed Staff None Listed	NO	NO	NO	ENG	**		
Intl. Soc. for Terrain-Vehicle ms. Inc. (ISTVS) Stevens Institute of Technology Castle Point Station Hoboken, New Jersey 07030 Member None Listed Staff Journal Editor	NO	NO	NO	MET	**		
Investment Casting Institute (ICI) 8521 Clover Meadow Drive Dallas, Texas 75243 Member None Listed Staff None Listed	NO	NO	NO	ENG	**		
The Irrigation Association (IA) 13975 Connecticut, Avenue Silver Spring, Maryland 20906 Member None Listed Staff T.J. Schiltz	NO	NO	NO	DUAL	DUAL	**	
Joint Industrial Council (JIC) 7901 Westpark Drive McLean, Virginia 22101 Member None Listed Staff John B. Deam	NO	NO	NO	ENG	ENG	**	
Laminated Fiberglass Insulation Producers Association (LFIPA) 1230 Keith Building Cleveland, Ohio 44115							

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Laundry and Cleaners Allied Trades Assoc., Inc. (LCATA) 543 Valley Road Upper Montclair, N.J. 07043							
Lead Industries Association, Inc. (LIA) 292 Madison Avenue New York, New York 10017							
Library Binding Institute (LBI) 50 Congress Street Suite 630 Boston, Massachusetts 02109 Member None Listed Staff None Listed	NO	NO	NO	ENG			
Magnetic Materials Producers Association (MMPA) 1717 Howard Street Evanston, Illinois 60202 Member Technical Committee Staff None Listed	NO	NO	NO	DUAL	**		
Manufacturers of Binders Board c/o Renita Jay 19112 Roman Way Gaithersburg, Maryland 20760							
Manufacturers Standardization Society of the Valve and Fittings Ind., Inc. (MSSVFI) 5203 Leesburg Pike Falls Church, Virginia 22041 Member None Listed Staff None Listed	NO	NO	YES	DUAL		***	

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		YES	NO	YES	NO	YES	NO	0	10	25	50	OT		
Maple Flooring Manufacturers Assoc., Inc. (MFMA) 2400 East Devon #205 Des Plaines, Illinois 60018														
Marking Device Assoc. (MDA) 708 Church Street Evanston, Illinois 60201	NO	NO	NO	ENG	ENG				**					
Member None Listed Staff Thomas H. Brinkmann														
The Material Handling Institute, Inc. (MHI) 1326 Freeport Road Pittsburgh, Pa. 15238	NO	NO	NO			DUAL	DUAL		**					
Member None Listed Staff None Listed														
Mechanical Power Transmission Association (MPTA) 1717 Howard Street Evanston, Illinois 60202	NO	NO	NO			DUAL	DUAL		**				***	
Member Standards Committee Staff None Listed														
Metal Building Manufacturers Association (MBMA) 1230 Keith Building Cleveland, Ohio 44115	NO	NO	NO			DUAL	DUAL		**				***	
Member John Rave Staff Duane Ellifritt														
Metal Cookware Manufacturers Association (MCMA) P. O. Box J Walworth, Wisconsin 53184	YES	NO	YES			DUAL			**					***
Member Standards Committee Staff Paul Uetzmann														

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Metal Lath/Steel Framing Association (MLA) 221 North LaSalle Street Suite 1507 Chicago, Illinois 60601							
Metal Powder Industries Federation (MPIF) Box 2054 Princeton, New Jersey 08540	NO	NO	YES	DUAL	ENG	..	
Member None Listed Staff Editor, Tech. Journal							
Metal Treating Institute, Inc. (MTI) 1300 Executive Center Drive Suite 115 Tallahassee, Florida 32301							
Metal Tube Packaging Council of North America (MTPC) 118 East 61st Street New York, New York 10021							
Mill Mutual Fire Prevention Bureau (MMFPB) 2 North Riverside Plaza Chicago, Illinois 60606	NO	NO	NO	DUAL	DUAL	..	
Member None Listed Staff Bulletin Writers							
Monorail Manufacturers Assoc., Inc. (MMA) 1326 Freeport Road Pittsburgh, Pa 15238	NO	NO	NO	DUAL	DUAL		
Member None Listed Staff L W Shea							

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		CONFER ENCES	ATIONS	ENG MET	DUAL	ENG MET	DUAL	0	10	25	50	OT			
MO-SAI Institute (MOSAI) 109 Knollwood Drive Greensboro, N C 27403															
MTM Association For Standards In Research (MTM) 16-01 Broadway Fair Lawn, New Jersey 07410	NO	YES	NO	ENG		ENG			**				***		
Member None Listed Staff None Listed															
Narrow Fabrics Institute (NFI) 481 Main Street New Rochelle, New York 10801															
National Accreditation Council for Agencies Serving the Blind & Visually Handicapped (NAC) 79 Madison Avenue, Room 1406 New York, New York 10016													***		
Member None Listed Staff None Listed															
National Agricultural Chemicals Association (NACA) 1155 15th Street, N.W. Madison Bldg., Suite 514 Washington, D C. 20005	NO	NO	NO	ENG											
Member None Listed Staff Lawrence Norton															
Nat. Assoc. of Architectural Metal Manufact. (NAAMM) 221 N LaSalle Street Suite 2026 Oak Park, Illinois 60601															

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National Association of Broadcasters (NAB) 1771 N Street, N.W. Washington, D.C. 20036 Member: None Listed Staff: None Listed	NO	NO	NO	ENG	ENG			
National Association of Chain Manufacturers (NACM) 500 North Michigan Avenue Chicago, Illinois 60611 Member: F.C. Zirkilton Staff: None Listed	NO	NO	NO	DUAL	DUAL	**	***	
National Association of Corrosion Engineers (NACE) 1400 South Creek Houston, Texas 77084 Member: Publications Comm. Staff: None Listed	NO	NO	NO	DUAL	DUAL	**		
Natl. Assoc. of Furniture Manufacturers (NAFM) 8401 Connecticut Avenue Suite 911 Washington, D.C. 20015 Member: None Listed Staff: Joe Ziolkowski	NO	NO	NO	ENG	ENG	**		
National Association of Garage Door Manufacturers (NAGDM) 410 North Michigan Avenue Chicago, Illinois 60611 Member: None Listed Staff: June G.Fitzgerald	YES	YES	NO	DUAL	DUAL	**		
Natl. Assoc. of Glue Mfg., Inc. (NAGM) 663 Fifth Avenue New York, New York 10022 Member: None Listed Staff: None Listed	NO	NO	NO	DUAL	MET	**		

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				TECHNICAL PUBLICATIONS	ENG MET DUAL		0	10	25	50	OT		
Natl. Assoc. of Hosiery Mfr 516 Charlottetown Mall P O. Box 4098 Charlotte, North Carolina 28204  Member None Listed Staff Sid Smith	NO	NO	YES	ENG		ENG							
National Association of Insect Electrocuter Mfr. (NAIEM) P O. Box 150 Clinton Corners, NY. 12514  Member Gustav Detjen Jr. Staff None Listed	NO	NO	NO	DUAL		DUAL							
National Association of Name Plate Mfr., Inc. (NANPM) 1000 Vermont Avenue, NW Washington, D.C. 20005													
National Association of Pattern Mfr., Inc. (NAPM) 21010 Center Ridge Road Cleveland, Ohio 44116													
National Association of Pipe Coating Applicators (NAPCA) 2504 Flournoy Lucas Road Shreveport, Louisiana 71118  Member None Listed Staff None Listed	NO	NO	NO	DUAL		DUAL		**					
Natl. Assoc. of Plastic Fabricators, Inc. (NAPF) 1701 N Street, NW Washington, D.C. 20036  Member None Listed Staff None Listed	NO	NO	NO	DUAL		DUAL					**	***	

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National Association of Plumbing-Heating-Cooling Contractors (NAPHCC) 1016 20th Street, NW Washington, D.C. 20036 Member Technical Committee Staff: A. T. Strother	NO	NO	ENG	ENG	..	...	
National Assoc. Recycling Industries, Inc. (NARI) 30 Madison Avenue New York, New York 10017							
National Association of Relay Manufacturers (NARM) P.O. Box 1503 Elkhart, Indiana 46515 Member: EIA, NARM P5 7 Comm. Staff: R. C. Johnson	NO	NO	DUAL	DUAL	..	...	
National Association of Pocketry (NAP) P.O. Box 725 New Providence, N.J. 07974 Member: J. Patrick Miller Staff: None Listed	YES	NO	MET	DUAL	..	...	
National Association of Store Fixture Manufacturers (NASFM) 5970 West Sunrise Blvd. Sunrise, Florida 33313 Member: None Listed Staff: None Listed	NO		ENG				
National Audio-Visual Association (NAVA) 3150 Spring Street Fairfax, Virginia 22030 Member: None Listed Staff: None Listed						...	

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National Automatic Merch. Association (NAMA) 7 South Dearborn Street Chicago, Illinois 60603	NO	NO	NO	ENG	**	...	
Member None Listed Staff Walter W. Reed							
National Bark Producers Association (NBPA) 301 Maple Avenue, West Tower Suite 504 Vienna, Virginia 22180	NO	NO	NO	ENG	**	...	
Member None Listed Staff None Listed							
National Barrel and Drum Association (NBDA) 910 17th Street, N.W. Suite 912 Washington, D.C. 20006							
The National Board of Boiler and Pressure Vessel Inspectors (NBBPVI) 1055 Crupper Avenue Columbus, Ohio 43229							
National Building Granite Quarries Assoc. (NBGQA) c/o John Swenson Granite Co N. State Street Concord, New Hampshire 03302	NO	NO	NO	ENG	**		
Member None Listed Staff None Listed							
National Cable Television Association, Inc. (NCTA) 918 16th Street, N.W. Washington, D.C. 20006							

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National Old Pipe Institute (NOPA) 1015 15th Street, N.W. Suite 804 Washington, D.C. 20005								
National Coil Coaters Association (NCCA) 1800 Arch Street Philadelphia, PA 19103								
National Committee For Clinical Laboratory Standards (NCLC) 77 East Lancaster Avenue Willanowa, Pa. 19085 Member: Supcomm on SI Units Staff: John N. McConnell	YES	YES	YES	MET	MET	..	...	...
National Concrete Masonry Association (NCMA) P.O. Box 781 Herndon, Virginia 22070 Member: NCMA Tech. Sub. Com Staff: Gary D. Schoenfeld	NO	NO	NO	ENG	ENG	..	...	
National Cottonseed Products Association, Inc (NCPA) P.O. Box 12023 2400 Poplar Avenue, Suite 528 Memphis, Tennessee 38112 Manager: None Listed Staff: Kenneth O. Lewis	NO	NO	NO	ENG	ENG	.	...	
National Council on Radiation Protection and Measurements (NCRPM) 7910 Woodmont Avenue, St. 1016 Bethesda, Maryland 20014 Member: None Listed Staff: None Listed	NO	NO	NO	DUAL	DUAL	..		

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National Crushed Stone Association (NCSA) 1415 Elliot Place, N.W. Washington, D.C. 20007							
National Education Association (NEA) 1201 16th Street, N.W. Washington, D.C. 20036 Member None Listed Staff Richard W. Cortright	YES	NO	NO	ENG		***	
National Electrical Contractors Association, Inc. (NECA) 7315 Wisconsin Avenue-13th Fl Washington, D.C. 20014 Member None Listed Staff Charles J. Hart	YES	NO	NO	ENG	**	***	
National Electrical Manufacturers Association 2101 L Street, N.W. Washington, D.C. 20037 Member None Listed Staff H. Brooke Stauffer	YES	NO	YES	ENG	**		***
National Elevator Industry, Inc. (NEI) 600 Third Avenue, 9th Floor New York, New York 10016 Member Standards Comm. Staff Edward A. Donoghue	NO	NO	NO	DUAL	DUAL	**	
National Environmental Balancing Bureau (NEBB) 8224 Old Courthouse Road Tysons Corner Vienna, Virginia 22180 Member W. David Bevirt Staff None Listed	NO	NO	NO	ENG		***	

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National Fertilizer Solutions Association (NFSA) 3823 North Industrial Drive Peoria, Illinois 61614							
National Fire Protection Association (NFPA) 170 Atlantic Avenue Boston, Massachusetts 02110 Member: None Listed Staff: Ron Backman	YES	NO	YES	DUAL		---	
National Fisheries Institute (NFI) 1101 Connecticut Avenue, Suite 700 Washington, D.C. 20036 Member: None Listed Staff: Roy E. Martin	NO	NO	NO	ENG	..		
National Fluid Power Association (NFPA) 3333 North Mayfair Road, Suite 311 Milwaukee, Wisconsin 53222 Member: Metric Coord. Comm. Staff: James E. White	YES	NO	YES	DUAL	..		---
National Forest Products Association (NFPA) 1619 Massachusetts Ave., N.W. Washington, D.C. 20036 Member: Robert K. Hood Staff: Gerald F. Prange	YES	NO	NO	ENG	..		---
The National Hardwood Lumber Association (NHLA) Box 34518 Memphis, Tennessee 38104 Member: None Listed Staff: G. C. White	NO	NO	NO	ENG	..		

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	CONFER ENCES	ATIONS	NO	NO	ENG	ENG	ENG	MET	DUAL	O	10	25	50	OT		
National Institute of Oilseed Products (NIOP) 111 Sutter Street San Francisco, CA 94104	NO		NO	NO	ENG		ENG									
Member None Listed Staff None Listed																
National Knitted Outerwear Association (NKOAA) 51 Madison Avenue New York, New York 10010																
National Lime Assoc. (NLA) 5010 Wisconsin Avenue, N.W. Washington, D.C. 20016																
National Lubricating Grease Institute (NLGI) 4635 Wyandotte Street Kansas City, Missouri 64112																
National Micrographics Association (NMA) 8719 Colesville Road Silver Spring, Maryland 20910	YES	NO	YES		DUAL		DUAL		DUAL	**					...	
Member Standards Comm. Staff Technical Coordinator																
National Model Railroad Association, Inc. (NMRA) P.O. Box 2186 Indianapolis, Indiana 46206	NO	NO	NO		DUAL		DUAL		DUAL			**				
Member Gen. Chair. Engin. Staff Technical Department																

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National Oak Flooring Mfg. Assoc., Inc. (NOFMA) 804 Sterick Building Memphis, Tennessee 38103	NO	NO	NO	ENG	ENG			
Member None Listed Staff None Listed								
National Operating Committee For Stds. For Athletic Eqp (NOCSEAE) Wayne State University Detroit, Michigan 48201 Member None Listed Staff Voigt Hodgson	NO	NO	NO	ENG	ENG	**	***	
National Particleboard Association (NPA) 2306 Perkins Place Silver Spring, Maryland 20910								
National Pest Control Association, Inc. (NPCA) 8150 Leesburg Pike, Suite 1100 Vienna, Virginia 22180	NO	NO	NO	DUAL	DUAL	**	***	
Member Research Council Staff Mr. Jefferson Keith								
National Printing Ink Research Institute (NPRI) Lehigh University, Building 7 Bethlehem, Pennsylvania 18015								
National Ready Mixed Concrete Association (NRMCA) 900 Spring Street Silver Spring Maryland 20910	NO	NO	NO	ENG	ENG	**		
Member None Listed Staff Richard D. Gaynor								

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				ENG	MET	DUAL	ENG	MET	DUAL	0	10	25	50	OT			
National Recreation and Park Association (NRPA) 1601 North Kent Street Arlington, Virginia 22209  Member None Listed Staff None Listed	NO	NO	NO			DUAL			DUAL			**			***		
National Retail Merchants Association (NRMA) 100 West 31st Street New York, New York 10001  Member None Listed Staff None Listed															***		
National Rifle Association of America (NRA) 1600 Rhode Island Avenue, N.W. Washington, D.C. 20036																	
National Roofing Contractors Association (NRCA) 1515 North Harlem Avenue Oak Park, Illinois 60302  Member None Listed Staff Robert A. LaCasse	NO	NO	NO	NO	ENG		ENG					**					
National Sanitation Foundation (NSF) NSF Building, 3475 Plymouth Rd Ann Arbor, Michigan 48106  Member None Listed Staff Standards Development	YES	NO	NO	NO		DUAL			DUAL						***		
National School Supply and Equipment Association (NSSEA) 1500 Wilson Boulevard, Suite 609 Arlington, Virginia 22209  Member None Listed Staff None Listed	NO	NO	NO	NO	ENG		ENG										

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National Soft Drink Association (NSDA) 1101 16th Street, N.W. Washington, D.C. 20036  Member None Listed Staff Robert Z. Bohan	YES	NO	NO	ENG	ENG		***	
National Solid Wastes Management Assoc. (NSWMA) 1120 Connecticut Avenue, N.W. Suite 930 Washington, D.C. 20036 Member None Listed Staff Michael B. Cooper	NO	NO	NO	ENG	ENG			
National Soybean Processors Association (NSPA) 1800 M Street, N.W., Suite 1030 Washington, D.C. 20036  Member None Listed Staff Rond Roth	NO	NO	NO	ENG	ENG		***	
National Spa and Pool Institute (NSPI) 200 K Street, N.W. Washington, D.C. 20006  Member Don Witte Staff Larry Paulick	NO	NO	NO	DUAL	ENG	**		
National Standards Association, Inc. (NSA) 5161 River Road Washington, D.C. 20016  Member Robert B. Toth Staff None Listed	NO				ENG MET	**	***	***
National Terrazzo and Mosaic Association Inc. (NTMA) 3166 Des Plaines Avenue Suite 15 Des Plaines, Illinois 60018								

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National Tire Dealers and Retreaders Association 1343 L Street, N.W. Washington, D.C. 20005	NO	NO	NO	MET	**		
Member None Listed Staff Anita A. Brown							
National Wholesale Hardware Association (NWHHA) 1900 Arch Street Philadelphia, PA 19103							
National Wooden Pallet and Container Association (NWPCA) 1619 Massachusetts Ave., N.W. Washington, D.C. 20036							
National Woodwork Manufacturers Association, Inc. (NWWA) 205 West Touhy Avenue Park Ridge, Illinois 60068 Member None Listed Staff Jeffrey Lowinski	NO	NO	NO	DUAL	**	***	
Northeastern Lumber Manufacturers Association Four Fundy Road Fairbouth, Maine 04105	NO	NO	NO	ENG	**		
Member None Listed Staff None Listed							
Northern Hardwood and Pine Mfg. Assoc., Inc. (NHPMA) 501 Northern Building 305 East Walnut Street Green Bay, Wisconsin 54301 Member None Listed Staff Executive Vice Presid	NO	NO	NO	ENG	**		

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Northern Textile Assoc. (NTA) 211 Congress Street Boston, Massachusetts 02110  Member: None Listed Staff: Michael W. Garland	NO	NO	DUAL		..	...	
Optical Manufacturers Association, Inc. (OMA) 1901 North Fort Myer Drive Suite 1501 Arlington, VA 22209							
The Packaging Institute (PI) 242 Madison Avenue New York, New York 10017							
Leaver Convertors Association (PCA) 1000 Vermont Avenue, N.W. Suite 1200 Washington, D.C. 20005							
Paperboard Packaging Council (PPC) 1800 K Street, N.W., Suite 200 Washington, D.C. 20006  Member: None Listed Staff: Spencer A. Johnson	NO	NO	NO ENG		..		
Parlite Institute, Inc. (PI) 45 West 15th Street New York, New York 10036  Member: None Listed Staff: None Listed	NO	NO	DUAL	DUAL	..		

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			ENG	MET DUAL	ENG	MET DUAL	0	10	25	50	OT			
The Photographic Society of America (PSA) 2005 Walnut Street Philadelphia, PA 19103													...	
Member None Listed Staff None Listed														
Pipe Fabrication Institute (PFI) 1326 Freeport Road Pittsburgh, PA 15238	YES	NO	NO			DUAL					**		***	...
Member J.H. Heinz Staff None Listed														
Plastics Pipe Institute (PPI) 369 Lexington Avenue, 10th FL New York, New York 10017	NO	NO	NO	ENG		ENG					**		***	
Member None Listed Staff None Listed														
Plumbing and Drainage Institute (PDI) 5342 Boulevard Place Indianapolis, Indiana 46208														
Porcelain Enamel Institute, Inc. (PEI) 1911 North Fort Myer Drive Arlington, Virginia 22209														
Portland Cement Assoc. (PCA) 5420 Old Orchard Road Skokie, Illinois 60077														

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Post-Tensioning Institute (PTI) 301 W. Osborn Street, Suite 3500 Phoenix, Arizona 85013 Member: None Listed Staff: C. Freyermuth	NO	NO	NO	ENG	ENG	..		
Pressure-Sensitive Tape Council (PSTC) 1800 Pickwick Avenue Stevenville, Illinois 60025								
Prestressed Concrete Institute (PCI) 20 North Wacker Drive Chicago, Illinois 60606 Member: Metrication Comm. Staff: Staff	YES	NO	NO	DUAL	ENG		...	...
Pulverized Limestone Association (PLA) 600 Sylacauga Calcium Prod Co P.O. Box 330 Sylacauga, Alabama 35150								
Rack Manufacturers Institute (RMI) 1326 Freepport Road Pittsburgh, PA 15238 Member: Robert Hohl Staff: None Listed	NO	NO	NO	DUAL	DUAL	..	...	
Radio Technical Commission for Aeronautics (RTCA) 1717 P Street, N.W., Suite 655 Washington, D.C. 20006 Member: None Listed Staff: None Listed	NO	NO	NO	MET	MET		...	

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SURVEY ON METRICATION

ORGANIZATION	FORMAL POLICY	PROMOTION		UNITS USED IN		UNITS USED IN		ESTIMATED						COMMENT	BIBLIO
		CONFER ENCES	PUBLIC ATIONS	TECHNICAL PUBLICATIONS	ENG MET DUAL	STANDARDS AND CODES	ENG MET DUAL	TIME FOR CONVERSION IN YEARS	0	10	25	50	OT		
The Railway Tie Assoc. (RTA) 314 North Broadway St. Louis, Missouri 1 63102															
Recording Industry Association of America, Inc. (RIAA) 9200 Sunset Boulevard, Suite 1005 Los Angeles, California 90069															
Recreation Vehicle Industry Association (RVIA) P.O. Box 204 14650 Lee Road Chantilly, Virginia 22021 Member Bruce A. Hopkins Staff None Listed	NO	NO	NO			DUAL			DUAL			**	***		
Red Cedar Shingle & Handsplit Shake Bureau (RCSHSB) 515 116th Avenue, N.E. Suite 275 Bellevue, Washington 98004															
Redwood Inspection Service (RIS) One Lombard San Francisco, California 94111 Member None Listed Staff Peter Johnson	NO	NO	NO						ENG						
The Refractories Institute (RI) One Oliver Plaza Pittsburgh, Pennsylvania 15222 Member None Listed Staff C.G. Marvin	NO	NO	NO			DUAL							***	***	***

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ORGANIZATION	FORMAL POLICY	PROMOTION		UNITS USED IN TECHNICAL PUBLICATIONS		UNITS USED IN STANDARDS AND CODES		ESTIMATED TIME FOR CONVERSION IN YEARS					COMMENT	BIBLIO
		CONFER ENCES	ATTIONS	ENG MET	DUAL	ENG MET	DUAL	0	10	25	50	OT		
Resilient Floor Covering Institute (RFCI) 1030 15th Street, N.W. Suite 350 Washington, D.C. 20005														
Resistance Welder Mfg. Association (RWMA) 1970 Ardmore Blvd. Philadelphia, PA 19103	NO	NO	NO	ENG		ENG			..				...	
Master Manufacturers SubCom. Staff: Tom Carroll														
Steel Pipe Manufacturers Association, Inc. (RMA) 1000 Pennsylvania Avenue, N.W. Washington, D.C. 20006	NO	NO	NO	ENG MET	DUAL	ENG	DUAL						...	
Member: None Listed Staff: Edward J. McCarthy														
Scaffolding, Shoring, and Forming Institute (SSFI) 2300 South Building Cleveland, Ohio 44115	NO	NO	NO	ENG		ENG								
Member: Dr. C. W. Plane Staff: Ernie Alstons														
Scale Manufacturers Association (SMA) 100 Vermont Avenue, N.W. Washington, D.C. 20005	NO	NO	NO	ENG		ENG								
Member: None Listed Staff: Gregory Boech														
Scientific Apparatus Makers Association (SAMA) 1001 15th Street, N.W. Suite 350 Washington, D.C. 20006 Member: None Listed Staff: None Listed	NO	NO	NO		DUAL		DUAL						...	

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ORGANIZATION	FORMAL POLICY	PROMOTION CONFERENCES	UNITS USED IN TECHNICAL PUBLICATIONS ENG MET DUAL	UNITS USED IN STANDARDS AND CODES ENG MET DUAL	ESTIMATED TIME FOR CONVERSION IN YEARS 0 10 25 50 OT	COMMENT	BIBLIO
Screen Manufacturers Association (SMA) 410 North Michigan Avenue Chicago, Illinois 60611  Member Metric Committee Staff June G. Fitzgerald	YES	NO	NO	DUAL	DUAL	..	
Sealed Insulating Glass Mfg. Assoc. (SIGMA) 111 East Wacker Drive Suite 600 Chicago, Illinois 60601 Member None Listed Staff None Listed	NO	NO	NO	ENG			
Semiconductor Equipment & Materials Institute (SEMI) 625 Ellis Street, Suite 212 Mountain View, California 94093 Member None Listed Staff P. Scheffel	NO	NO	NO	DUAL	DUAL	..	
Sheet Metal and Air Condition- ing Contractors Natl. Assoc., Inc. (SMACNA) 8224 Old Courthouse Road Vienna, Virginia 22180							
Small Motor Manufacturers Association (SMMA) 435 N. Michigan Avenue 17th Floor Chicago, Illinois 60611 Member None Listed Staff None Listed	NO					...	
Snowmobile Safety and Certification Committee (SSCC) 7535 Little River Turnpike, Suite 330 Annandale, Virginia 22003 Member None Listed Staff Roy W. Muth	NO	NO	NO	DUAL	DUAL		

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General Motors Technical Center Warren, Mich. (SFC) St. Louis, Mo. (SFC) Warren, Mich. (SFC) Warren, Mich. (SFC) Warren, Mich. (SFC) Warren, Mich. (SFC)	NO						
Society of Automotive Engineers, Inc. (SAE) 1700 Commonwealth Drive Warrendale, Pennsylvania	YES	YES				...	..
Mentor, Metal Adv. Comm. Staff, New York							
Society of Die Casting Engineers, Inc. (SDCE) 155 State Street Des Plaines, Illinois 60018							
Society of Motion Picture and Television Engineers (SMPTe) 217 Corporate Avenue Beverly Hills, California 90210	YES	NO		DUAL		...	...
Member, New York Staff, A. E. Alder							
The Society of Naval Architects and Marine Engineers (SNAMPE) One World Trade Center, Suite 1409 New York, New York 10048	YES	NO		DUAL		..	
Mentor, Robert Johnson Staff, New York							
The Society of the Plastics Industry, Inc. (SPI) One Washington Avenue New York, New York 10017	NO	NO		DUAL		...	...
Mentor, New York Staff, John Lawrence							

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Southern Building Code Congress Intl. (SBCC) 900 Montclair Road Birmingham, Alabama 35213  Member None Listed Staff W.G. Vasvary	NO	NO	NO	ENG	ENG	..		
Southern Cypress Mfg. Assoc. (SCMA) 805 Sterick Building Memphis, Tennessee 38103								
Southern Forest Products Association (SFPA) Box 52468 New Orleans, Louisiana 70152  Member None Listed Staff Karl W. Lindberg	YES	NO	NO	ENG	ENG	**		
Southern Pine Inspection Bureau (SPIB) 4709 Scenic Highway Pensacola, Florida 32504								
Speciality Equipment Market Association (SEMA) 11001 Eas+ Valley Mall Suite 200 El Monte, California 91731								
Specialty Wire Association (SWA) 7735 Old Georgetown Road. Suite 4444 Bethesda, Maryland 20014								

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Sponge and Chamolis Institute (SOCI) 411 Fifth Avenue New York, New York 10010							
Spring Manufacturers Institute, Inc. (SMI) 1011 West 22nd Street Oak Brook, Illinois 60521							
Stained Glass Association of America (SGAA) 1125 Wilmington Avenue St. Louis, Missouri 63111							
Steel Bar Mills Association (SBMA) 1125 West Lake Street Oak Park, Illinois 60304 Member None Listed Staff None Listed	NO	NO	NO	DUAL ENG	..	...	
Steel Deck Institute (SDI) P.O. Box 3812 St. Louis, Missouri 63102							
Steel Door Institute (SDI) c/o E. J. Wherry and Associates, Inc. 712 Lakewood Center North Cleveland, Ohio 44107 Member None Listed Staff None Listed	NO	NO	NO	MET ENG			

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						0 10 25 50 OT		
Steel Founders' Society of America (SFSA) 20611 Center-Ridge Road Rocky River, Ohio 44116  Member None Listed Staff None Listed	NO	NO	NO	DUAL			***	
Steel Joist Institute (SJI) 1703 Parham Road, Suite 204 Richmond, Virginia 23229								
Steel Structures Painting Council (SSPC) 4400 Fifth Avenue Pittsburgh, Pennsylvania 15213  Member None Listed Staff None Listed	NO	NO	NO	DUAL	DUAL	**		
Steel Tank Institute (STI) 111 East Wacker Drive Suite 600 Chicago, Illinois 60601								
Steel Window Institute (SWI) 1230 Keith Building Cleveland, Ohio 44115  Member Ronald Danielson Staff Frank Akstens	NO	NO	NO	ENG	ENG	**	***	
Stucco Manufacturers Association (SMA) 14006 Ventura Boulevard Sherman Oaks, California 91423								

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ORGANIZATION	FORMAL POLICY	CONFERENCES	PROMOTION PUBLIC AFFAIRS	UNITS USED IN TECHNICAL PUBLICATIONS		UNITS USED IN STANDARDS AND CODES		ESTIMATED TIME FOR CONVERSION IN YEARS						COMMENT	BIBLIO
				ENG	MET DUAL	ENG	MET DUAL	0	10	25	50	OT			
Sump Pump Manufacturers Association (SPMA) 221 North LaSalle Street Chicago, Illinois 60601															
Technical Assoc. of the Pulp and Paper Industry (TAPPI) One Dunwoody Park Atlanta, Georgia 30338	YES	NO	YES		DUAL		DUAL			..			....		
Member None Listed Staff Jean Churchill															
Textile Rental Services Assoc. of America (TRSA) 1250 East Hallandale Beach Blvd Box 1283 Hallandale, Florida 33009 Member Everett E. Harris Staff None Listed	NO	NO	NO	ENG								..			
Thermal Insulation Mfg Association (TIMA) 7 Kirby Plaza Mount Kisco, New York 10549															
Tile Council Of America, Inc (TCA) Box 326 Princeton, New Jersey 08540															
Tire And Rim Association, Inc (TRA) 3200 West Market Street Akron, Ohio 44313	NO	NO	NO	ENG		ENG	ENG					..	....		
Member Metric Task Group Staff J. F. Gault															

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				TECHNICAL PUBLICATIONS	ENG MET DUAL		O	10	25	50	OT		
Truck Body And Equipment Association, Inc. (TBEA) 5530 Wisconsin Avenue Washington, D.C. 20015													
Truck Trailer Manufacturers Association (TTMA) 2430 Pennsylvania Avenue, NW Washington, D.C. 20037	NO	NO	NO	ENG	ENG			**				***	
Member Adrian Hulverson Staff Donald Vierimaa													
Truss Plate Institute (TPI) 2400 East Devon, #205 Des Plaines, Illinois 60018													
Tubular Exchanger Mfg. Association (TEMA) 707 Werchester Avenue White Plains, New York 10604	YES	NO	NO	ENG	ENG			**				***	***
Member T. Richard Harrington Staff Richard C. Byrne													
Ultrasonic Industry Association, Inc. (UIA) c/o Penn Affiliates, Inc. 481 Main Street New Rochelle, New York 10801													
Underwriters Laboratories, Inc. (UL) 333 Pfingsten Road Northbrook, Illinois 60061	NO	NO	NO	ENG	ENG							***	
Member None Listed Staff A. N. Angonese													

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			ENG	MET	DUAL	ENG	MET	DUAL	0	10	25	50		
United States Golf Association (USGA) Golf House Far Hills, New Jersey 07931														
United States Pharmacopoeial Convention (USPC) 12601 Twinbrook Parkway Rockville, Maryland 20852	YES	NO	NO	MET		MET						...		
Member, Comm. of Revision Staff None Listed														
United States Tennis Court & Track Builders Association (USTCTBA) 1800 Pickwick Avenue Glenview, Illinois 60025														
Vacuum Cleaner Manufacturers Association (VOMA) 1615 Collamer Street Cleveland, Ohio 44110	NO	NO	NO									...		
Member, Eng.-Tech. Comm Staff None Listed														
Variable Resistive Components Institute (VRCI) 3451 Church Street Skokie, Illinois 60203														
Vehicle Equipment Safety Commission (VESC) 4660 Kenmore Avenue, Suite 802 Alexandria, Virginia 22304														

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			ENG	MET DUAL		0 10 25 50 OT		
Water Pollution Control Federation (WPCF) 2626 Pennsylvania Avenue, N.W. Washington, D.C. 20037	YES	NO	YES	DUAL		**		
Member None Listed Staff E. DeMichele								
Water Quality Association (WQA) 477 East Butterfield Road Lombard, Illinois 60148	YES	NO	NO	ENG	ENG	**	***	***
Member None Listed Staff Lucius Cole								
Water Systems Council (WSC) 221 North LaSalle Street Chicago, Illinois 60601								
West Coast Lumber Inspection Bureau (WCLIB) P.O. Box 23145 Portland, Oregon 97223	NO	NO	NO	ENG	ENG	**		
Member None Listed Staff Ray L. Todd								
Western Wood Products Association (WWPA) 1500 Yeon Building Portland, Oregon 97204	YES	NO	NO	ENG	ENG		***	
Member None Listed Staff Neal Pinson								
Western Wooden Box Association (WWBA) P.O. Box 11037A Palo Alto, California 94306	NO	NO	NO	ENG	ENG		**	***
Member None Listed Staff E.A. Humphrey								

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		CONFER ENCES	ATIONS	ENG	MET	DUAL	ENG			
Wire Reinforcement Institute (WRI) 7906 Westpark Drive McLean, Virginia 22101	NO	NO	YES	ENG				..	...	...
Member William V. Wagner Jr. Staff: None Listed										
Wood and Synthetic Flooring Institute (WSFI) 2400 E. Devon, #205 Oak Flaines, Illinois 60015	NO	NO	NO	ENG			ENG			
Member: None Listed Staff: Robert F. Hitchens										
Wood Moulding and Millwork Producers (WMWP) P. O. Box 25276 1730 Southwest Skyline Portland, Oregon 97204	NO	NO	NO	ENG			ENG	..		
Member: None Listed Staff: None Listed										
Woodworking Machinery Mfg. of America (WMAA) 1900 Arch Street Philadelphia, Pa. 19103										
Writing Instrument Mfg. Association, Inc. (WIMA) 1625 Eye Street, N.W. Washington, D.C. 20006										
Zinc Institute, Inc. (ZII) 292 Madison Avenue New York, New York 10017	NO	NO	NO			DUAL			...	
Member: None Listed Staff: Ernest Horvick										

## COMMENTS

The comments below were submitted by the responding standards developing bodies. Those bodies submitting comments are indicated by asterisks in the "Comments" column of the preceding chart. The comments are listed in alphabetical order of the names of the submitting bodies.

### 1. Air Conditioning and Refrigeration Institute

We follow ASHRAE procedures based on E-380 (ASTM).

### 2. Air Diffusion Council

The Council has stated it will "go metric" only when the entire building industry does so. ADC products are "follow-on" installations which go into designed structures. When the structure requires metric, the products will be metric dimensioned. Several of our members sell overseas; they already can deliver metric sizes but they are not needed in the U.S now.

### 3. The Aluminum Association, Inc.

We are now developing separate, but parallel metric and English based standards. The conversion period will be 10-15 years depending upon customer activity.

The Aluminum Association supports the U.S. National Policy on metric conversion. In accordance with the U.S. Metric Conversion Act of 1975, it is the intention of the members of the Aluminum Association to voluntarily use the International System of Units, (Le Systeme International d'Unites) commonly known as SI.

The Technical Division of the Aluminum Association worked for some years on development of metric mechanical property, dimensional tolerance and other requirements for wrought products using the hard conversion approach, which resulted in the publication of "Aluminum Standards and Data, 1978 Metric SI". It was also instrumental in the development of metric versions of ANSI H35.1 - "Alloy and Temper Designation Systems for Aluminum", and ANSI H35.2 - "Dimensional Tolerances for Aluminum Mill Products". The first SI metric material specification ASTM B209-M covering aluminum and aluminum alloy sheet and plate was published in 1978. Individual companies are publishing metric product data basically derived from ANSI standards on preferred metric sizes either now issued or under development.

4. American Association of Poison Control Centers

Our constituency is composed of health professionals and scientists all of which use the metric system routinely.

5. American Boat and Yacht Council

Our industry is dependent on basic material suppliers.

6. American Bureau of Shipping

We are dependent on U.S. Industry.

7. American Concrete Paving Association

ACPA indicated that its constituency would take 10 - 25 years to convert to metric.

8. American Conference of Governmental Industrial Hygienists

In some ways they have already converted. In others, especially the design of local exhaust ventilation systems, there are no metric standards even in metric countries.

9. American Congress on Surveying and Mapping

ACSM indicated that they were beginning to use dual units in their technical publications and in their codes and standards. They indicated that their constituency would convert to metric in 10 - 25 years. The Metric Committee establishes and maintains liaison with those federal agencies concerned with the adoption of the International System of measurement (SI units) in the United States. The committee provides information to ACSM members on the status of the U.S. adoption of the SI units in the surveying and mapping fields. The committee serves as secretariat for the Surveying and Mapping Sector of the American National Metric Council. The committee cooperates with other societies and agencies in recommending a schedule for the adoption of SI units by the surveying and mapping community. Specific 1981 charge: Prepare a plan for the transition to SI units in the surveying and mapping professions. Be prepared to work with any group requesting aid in facilitating the transition to SI units.

10. American Foundrymen's Society

AFS does not publish standards. The units used in AFS publications are as reported by the authors. The Society's principal objective is the development and dissemination of new technology related to the manufacture and use of metal castings. Whereas castings are an integral part of countless numbers of finished products, they are not products in them-

selves. Foundries cooperate with customer designers and engineers, but do not themselves design castings. For these reasons, the metrication of castings rests with the end users and foundries must respond to the desires and needs of the markets they serve. Until metric units of measurement become dominant on testing equipment, scientists and engineers in the U.S. will, we feel, naturally continue to work in the English system and their reports will be issued accordingly.

11. American Hardboard Association

AHA indicated that they will have a policy by September 1981.

12. American Home Lighting Institute

We use only UL Standards. We write none of our own.

13. American Hospital Association

Many hospital departments are already using metric (e.g. laboratories).

14. American Industrial Hygiene Association

AIHA indicated that they use metric and dual citations in their technical publications.

15. American Institute of Architects

Please note for the record that AIA is not a standards or codes maker within the commonly held public definition of that term.

16. American Institute of Chemical Engineers

AICE cites metric and dual units in its technical publications. Our policy is to have all publications eventually use S.I. units; in the interim dual units are also being used in some publications.

17. American Institute of Steel Construction, Inc.

There is no good basis for estimating years before constituency converts to metric. AISC does not feel that they should be in the vanguard pressing for metrication but stand ready to convert to SI when the construction industry and the buyers of construction switch. Tentative conversion of our specification formulas and manuals have been made but are being held in files for use at the appropriate time.

18. American Iron and Steel Institute

Specification writing is a minimal Institute activity. Estimate on metric conversion is unpredictable at this time.

19. American Leather Chemists Association

The methods of analysis are in dual measurement. Constituency (chemists) are already well versed in metric system. ALCA does not publish standards per se.

20. American Library Association

Some library measurements are English such as measurement of shelves and some are in metric such as measurement of library cards. This has been true for a long time.

21. American National Standards Institute

ANSI indicated that their technical publications and standards and codes cite English only, or metric only, or dual units depending on the needs of the developer of the individual standard and publication.

22. The American Oil Chemists Society

In practice, the AOCS Board has requested that all AOCS committees use both metric and English systems in their presentations. Virtually 90 percent of existing AOCS publications utilize metrics.

23. American Petroleum Institute

API indicated that dual citations are used in technical publications and in codes and standards when they are revised. Hard conversion could take close to 50 years.

24. American Pharmaceutical Association

Products in pharmacy are almost universally on metric system. Long ago the Association went on record as supporting the metric system. Recent statement dated July 1969 on Metric System and third party payment states: Recognizing that the Association has gone on record as supporting routine use of the metric system, the committee recommends that pharmacists use the metric system in their practice and when submitting claims for third party payment.

25. American Plywood Association

Metric conversion in our sector will take 15-20 years, but will be obviously sooner if the U.S. conversion were mandated by legislation. Metric sizes can be furnished on special order. Publications for overseas are in metric.

26. American Railway Engineering Association

Our recommended practices deal with the interconnected network of railroads in Canada, the U.S., and Mexico, and we

have not had a problem using English units thus far. We anticipate that we could convert to metric over a few years when it is felt to be necessary. For instance, the gauge (the distance between the rails) can be expressed either as 4 feet, 8½ inches, or as 1435 mm.

27. American Society for Quality Control, Inc.

We publish generic standards, not product standards. ASQC represents a broad community of quality professions that encompasses a vast area of multiple industries, services and disciplines. It was therefore hard to estimate when we expect our constituency to be converted to metric. We see it coming, but it will hit our members at different times.

28. American Society for Testing and Materials

Each ASTM Standards Committee determines its own metric usage policy.

29. American Spice Trade Association

Retail packages are rounded down to the nearest gram. We have discontinued further pursuit of metrication. Cans and containers are presently marked in both English and metric.

30. American Textile Machinery Association

We have a plan to implement when appropriate. Until there is a meaningful conversion activity in the consumer products area, ATMA will monitor metric developments, but will take no direct action to initiate conversion within its membership.

31. American Trucking Associations, Inc.

It will take about 25 years for metric conversion to take place in our constituency area if vehicle manufacturers convert within the next 10 years.

32. American Vacuum Society

SI units are required, but dual units are permitted.

33. American Water Works Association, Inc.

AWWA indicated that they estimate their constituency converting to metric in 50 years or longer.

34. American Wood Preservers Bureau

It is my opinion that we do not represent the pressure-treated wood industry in the area of engineering or

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STATUS OF METRIC CONVERSION A SURVEY OF US STANDARDS  
WRITING ORGANIZATIONS(U) UNITED STATES METRIC BOARD  
ARLINGTON VA J M TASCHER ET AL. MAY 82

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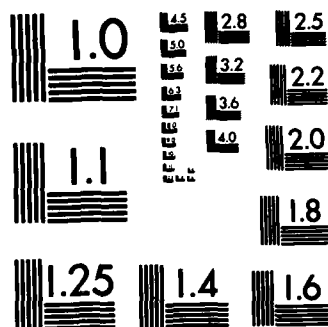
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NATIONAL BUREAU OF STANDARDS-1963-A

not file your survey which might allow you to think you have contacted the correct organization. Your contacts should be with American Wood Preservers Association.

35. Anti-Friction Bearing Manufacturers Association, Inc.

AFBMA indicated that they have a program of developing standards for metric bearings.

36. Archery Manufacturers Organization

AMO indicated that they cite English or metric units in its technical publications. The rate of metric conversion depends entirely on the speed with which the public accepts the metric standards.

37. Architectural Woodwork Institute

We will follow, not lead, construction industry.

38. Asbestos Textile Institute

We regret to advise you that ATI is no longer a viable organization.

39. Asphalt Emulsion Manufacturers Association

There is an agreement that all future AEMA technical publications will include both metric and English unit measurements.

40. Asphalt Institute

Several years ago when Congress passed the metric law, the Asphalt Institute Board of Directors agreed that we should use both customary and metric units in our publications with the metric units in parenthesis following the customary units. Then, about four years ago, we transposed the units, and we now show customary units in parenthesis following metric units and shall continue to do so until the country makes a definite move to metricate.

41. Asphalt Roofing Manufacturers Association

Partial conversion today, balance within 5 years.

42. The Associated Cooperage Industries of America, Inc.

We are proposing a dual system at our next Board meeting which will be held in November, 1981, after which, all specifications could be given either way.

43. Associated General Contractors of America

We do not publish technical papers or publish codes and standards.

44. Association of Bedding and Furniture Law Officials

Mandatory laboratory testing uses metric quantities.

45. Association of Edison Illuminating Companies

We have no opinion on when conversion will take place in our constituency area.

46. Association of Official Seed Analysts

AOSA indicated that they use metric or dual citations in its technical publications.

47. Audio Engineering Society, Inc.

AES indicated that the units cited in its technical publications depend on how they are submitted by the author. Customary units, however, are converted for dual citation.

48. Barre Granite Association, Inc.

Never use metric.

49. Biological Stain Commission

Commission is already converted.

50. Book Manufacturers Institute, Inc.

Metrickation in our industry is handled by the Graphic Arts Technical Foundation - Pittsburgh, PA. BMI is not directly involved.

51. Cast Iron Soil Pipe Institute

There are conversion tables in publications; otherwise there is not much metric use.

52. Caster and Floor Truck Manufacturers Association

CFTMA indicated that its constituency would take 25 or more years to convert and that the industry has no plans to convert.

53. Chlorine Institute, Inc.

One new publication is totally in SI units.

54. Composite Can and Tube Institute

Conversion takes place when requested by purchasers of industry products.

55. Compressed Gas Association, Inc.

Many industries and applications utilize products of the compressed gas industries in a variety of ways, so the demands of each will determine individual conversion rates. Some technical publications and codes and standards are in metric or dual citations.

56. Concrete Reinforcing Steel Institute, Inc.

We use English units except when we distribute the "stand-by" metric specification for reinforced bars (ASTM A615-81M) in which "SI" metric units are used, i.e. millimeters, meters, megapascal. The conversion will take place when building codes require metric or the federal government decides to make all their building construction in metric or even purchase our products only in metric.

57. Construction Industry Manufacturers Association

Our association's policy, as established by its Board of Directors, is to avoid a duplication of efforts. Our members will rely on other associations and groups to give them direction and information about metrification (such as the ANMC and the National Association of Manufacturers).

58. Copper Development Association, Inc.

The time period for conversion of our constituency is unpredictable. Our industry will supply products to whatever dimensions or units are requested by the customer.

59. Cordage Institute

The Institute indicated that they use English or dual citations in their technical publications.

60. Cosmetic, Toiletry and Fragrance Association, Inc.

Fair Packaging and Labeling Act, enforced by U.S. Food and Drug Administration, requires traditional English units of measure for net quantity declarations on cosmetics. Our members have not asked us to seek any change. Whichever units are appropriate to circumstances are the ones used in our documents.

61. Diamond Core Drill Manufacturers Association

DCDMA indicated that its constituency would convert to metric in 10 years and only when metric becomes the law of the land.

62. Dry Color Manufacturers' Association

No technical publications or standards or codes published.

63. Electrical Apparatus Service Association, Inc.

We are a Trade Association repairing electric motors, transformers, generators, etc. We cannot change until the manufacturers do. Then we will have to be dual for many years. EASA indicated that their technical publications cite English and dual units.

64. Facing Tile Institute

We will convert when the brick industry converts.

65. Financial Accounting Standards Board

The FASB establishes standards of financial accounting and reporting that are used by business corporations and other organizations in preparing their financial statements. Thus, the Board's standards entail dollar measurements as opposed to weights, lengths, volumes, and other measurements to which the metric system would be applicable. Therefore, a response to your survey by the FASB would not be relevant to your inquiry.

66. Fluid Controls Institute, Inc.

Since 1973 the FCI has been endeavoring to prepare "Standard of Instruction and Guidance in the Conversion of English to the Metric System". There are two major unresolved points which have delayed this project, namely flow coefficients of valves and pressure.

Agreement has recently been reached to express flow coefficients in the English system,  $C_v$  with the metric,  $K_v$ , being noted by parenthetical reference. Any consideration of the SI coefficient,  $A_v$ , will be many years away and for the time being will be ignored.

Resolution of the pressure dilemma has not been possible and no practical solution is in sight. Some of the Sections of the FCI strongly favor use of the bar with parenthetical reference to the pascal or the kilopascal. Other groups are equally strong in favor of the kilopascal as the basic unit. At the annual meeting of the FCI held just a month ago (May 1981) this was discussed with all of these groups and their positions remain firm. The members are influenced basically by the attitudes of their principal customers which seem to vary between fields even though the products involved are interrelated.

Until there is unification of user or customer practice or demand, the FCI will probably follow a dual system with emphasis being variable, in some instances on the English system and in others on the metric.

67. Forging Industry Association

Only the allowances and tolerance guidelines are in dual units.

68. Gypsum Association

Time period of conversion will depend on entire construction industry, but will never completely convert.

69. Hand Tools Institute

Inch products will be made as long as demand continues.

70. Hardwood Dimension Manufacturers Association

Estimated time period of conversion is 10-25 years.

71. Hardwood Plywood Manufacturers Association

We will not convert until Federal Government sets a firm deadline to convert for all building industries.

72. Illuminating Engineering Society of North America

The IES Lighting Handbook, 1981 Reference and Application Volumes, published in February 1981, has metric as the primary units with English shown within parentheses or brackets.

73. Institute for Interconnecting and Packaging Electronic Circuits

We are proposing a metric policy to our members. Please keep in mind that our proposed metric policy will only affect the printed wiring board and not end products.

74. Institute of Scrap Iron and Steel, Inc.

The Institute is not a "standards developing/writing organization." Accordingly, we are returning uncompleted the survey of metrication.

75. Insulated Cable Engineers Association

ICEA develops standards on various types of cables. To date the conductors in our standards have been described entirely in terms of an IEEE recommended unit, circular mils, or American Wire Gauge (AWG) for smaller sizes. We have not included the metric equivalents for conductors in our

standards. For other properties we use dual units. However, we are changing our philosophy to the extent of replacing the dual unit system with a conversion table.

We will also issue a guide for metric conductors. Our ICEA Communications Cable Section is sending to ANSI a document with the following title "Recommended Practice for Specifying Metric Wire Sizes in Specifications for Communications Cables for Outdoor Use in Exchange Areas and Toll Circuits". The other ICEA sections involved with power and control cables have set up a joint working group (528) to develop a similar guide for those cables.

**76. International Association of Geophysical Contractors**

The Society of Exploration Geophysics in Tulsa, OK has a committee developing guidelines for metrication of the worldwide geophysical exploration industry. When this committee's work is completed, the IAGC expects to be the lead group in implementing the program throughout our industry.

**77. International Association of Wiping Cloth Manufacturers**

We published metric conversion tables in the membership directory.

**78. International Commission on Radiation Units and Measurements**

The ICRU endeavors to collect and evaluate the latest data and information pertinent to the problems of radiation measurement and dosimetry and to recommend the most acceptable values and techniques for current use.

The ICRU's involvement and current policy in regard to the international system of units (SI) is outlined briefly on page 1 of the ICRU Report 33. We have found that some individuals, and even some small groups, see no reason for changing to a universal system because they see no immediate advantage to it. Generally, these individuals or groups do not consider the long-range benefits, but only the cost of changing to a new system. It is likely that education -- particularly of the new generations -- will alter this thinking.

There are also a number of national and international legislatures that have opted for a new system and in some cases made it mandatory. At one time the International Organization of Legal Metrology tabulated the nations that had adopted SI -- particularly in the ionizing radiation area. They may also have done such a tabulation for other areas.

**79. International Conference of Building Officials**

As soon as industry converts to metric our codes and standards can be changed. Codes are reactive. When industry converts, codes will be revised accordingly.

**80. International Masonry Institute**

The length of conversion period depends on the policy established by concrete block and brick manufacturers.

**81. Manufacturers Standardization Society of the Valve and Fittings Industry, Inc.**

We do not have a formal policy such as your question would indicate. However, in 1973, the Board of Directors of this organization adopted a resolution that all standards approved for publication by this organization thereafter would have equivalent metric dimensions added. At such point as it is evident that the industry has in fact converted to metric, the metric dimensions will become primary for one edition of each publication. Thereafter, the inch dimensions will be dropped. Thus each technical committee is responsible for providing the metric equivalents.

**82. Mechanical Power Transmission Association**

MPTA indicated that its constituency would convert to metric in 25 years and that they had no immediate plans to convert.

**83. Metal Building Manufacturers Association**

MBMA indicated that its published codes and standards use both English and dual citations.

**84. MTM Association for Standards In Research**

MTM indicated that they do, at times, use metric and dual citations in its technical publications and in its codes and standards.

**85. National Accreditation Council for Agencies Serving the Blind and Visually Handicapped**

Our standards are focused on various kinds of human services for blind and visually handicapped persons. As such, we do not produce scientific or engineering standards related to physical measurement. Our accreditation standards for the curriculum of elementary and secondary schools for the blind do include the general topic of metric measurement.

86. National Association of Chain Manufacturers

NACM indicated that it has an Ad Hoc Committee on Metrication.

87. National Association of Plastic Fabricators, Inc.

Time of conversion depends on conversion of other building products and of specifications and architectural drawings.

88. National Association of Plumbing-Heating-Cooling Contractors

Conversion will take place when it is mandated.

89. National Association of Relay Manufacturers

Since this industry is market driven, the conversion to metric will follow market forces. This industry will not lead the way in conversion to metric standards.

90. National Association of Rocketry

NAR indicated that metric citations are used for their technical publications and that dual units are used for general publications.

The National Association of Rocketry in conjunction with the Hobby Industry of America (Elmwood Park, NJ) publishes the "Model Rocket Safety Code". Where the code is used by technical hobbyists, it is written in metric. These people are already converted to metric. Where the code is published and used by general hobbyists, it is written in English and occasionally in dual. The reason for this is very obvious. The code is a set of safety guidelines for the launching of model rockets. It must be read and understood by all reading it. Unfortunately, if printed in metric, it would not be understood by the average hobbyist (13-year old boy).

91. National Audio-Visual Association

This Association does not develop standards independently. All standards work is carried on through American National Standards Committee PH-7, Audio-Visual System Standards.

92. National Automatic Merchandising Association

This association does not issue technical publications.

93. National Bark Producers Association

NBPA indicated that its constituency would be converted to metric in 10-25 years, if ever.

94. National Concrete Masonry Association

Our industry views metrication to be without benefit and, as small business, conversion expenditures would place an extreme hardship on our members.

95. National Cottonseed Products Association, Inc.

NCPA indicated that its constituency would convert to metric in 10-25 years.

96. National Education Association

NEA Resolution B-12--Conversion to the Metric System reads:

The National Education Association believes that adoption of the International System of Units (SI metric system) is essential to the future of American industrial and technological development. The Association urges that the SI system be taught at all educational levels.

97. National Electrical Contractors Association

NECA supports conversion to the metric system in a phased 10-year program.

98. National Environmental Balancing Bureau

NEBB indicated that it publishes a complete set of conversion tables and equations with its technical publications and its codes and standards.

99. National Fire Protection Association

There is a directive to soft convert all standards within five years.

100. National Operating Committee for Standards for Athletic Equipment

NOCSAE indicated that it would have dual citations in its codes and standards in the near future.

101. National Pest Control Association

Time of conversion will depend on education for conversion and policy and practice of pesticide and equipment manufacturers.

102. National Recreation and Park Association

Conversion time depends on government actions.

103. National Retail Merchants Association

At this time, the National Retail Merchants Association is not involved in writing or developing standards. Some of our individual members, through various professional associations, are engaged in such activity. It is not appropriate, therefore, that we return the survey.

104. National Sanitation Foundation

The Foundation follows ASTM E380-79.

105. National Soft Drink Association

The National Soft Drink Association does not have a national policy on the development of a metric system for the soft drink industry. Rather, it is a matter for individual companies' marketing policies.

106. National Soybean Processors Association

Metric units are often used in lieu of English units.

107. National Standards Association, Inc.

NSA is not a typical Engineering Society or Scientific Society. NSA, a private corporation, is a publisher, distributor and information center on standards and related documents used by government and industry. Its area of interest includes all standards, specifications and related documents, particularly in the field of high technology. It is the publisher of the 2500 National Aerospace Standards. Its holdings include more than 250,000 standards and specifications developed by government and industry.

108. National Woodwork Manufacturers Association, Inc.

NWMA indicated that its constituency would convert to metric in 25 - 50 years.

109. Northern Textile Association

Certain mills which we represent still use linear yard measurement to monitor production lines. The cost to these older mills to convert would be rather costly and would also necessitate an education program for workers.

110. Photographic Society of America

While the Photographic Society of America is a member of the American National Standards Institute (ANSI), and provides consumer representation on a number of ANSI committees, that

is the extent of our involvement in this area. Our organization does not have a formal policy on metrication, and the only metric activity our representatives might be involved in is that which may be required for their ANSI projects.

111. Pipe Fabrication Institute

PFI indicated that its new codes and standards use dual citations. Further conversion is dependent on the extent of conversion in the construction industry, especially phase dealing with piping.

112. Plastics Pipe Institute

Our organization does not have a formal policy towards metrication and I am not aware of any member participation within any other association toward this end either. The Plastics Pipe Institute is not a standards developing/working organization. We choose rather, to develop recommendations and these then are forwarded to the various organizations for their particular disposition.

113. Prestressed Concrete Institute

The Institute Policy Statement on Metrication reads:

The Prestressed Concrete Institute endorses metric conversion to the SI system of measurement. It is imperative that the conversion be done in a well planned, orderly fashion in order to minimize the difficulties that will result from the conversion, as well as to assure that the various standards adopted for use in the prestressed industry are logical and compatible. Hence, it is the policy of the Institute to continue to monitor the steps being taken toward metrication in the construction industry with the view of assisting the conversion and achieving reasonable and workable standards.

114. Rack Manufacturers Institute

There is a lot of very expensive machinery involved in conversion.

115. Radio Technical Commission for Aeronautics

Minimum Operational Performance Standards are recommended for aeronautical electronic equipment by Special Committees designated for that purpose. Metric (SI) units are specified except where they are not yet adopted internationally, such as altimetry usage for air traffic control.

116. Recreation Vehicle Industry Association

Conversion is totally dependent on automotive industry.

117. The Refractories Institute

The Institute participates in ASTM Committee C-8 and International Standards Organization Committee TC-33.

118. Resistance Welder Manufacturers Association

The Association indicated that it is presently reviewing whether it should have a formal policy on metrication and what that policy should be.

119. The Rubber Manufacturers Association, Inc.

RMA indicated that its codes and standards cite English and dual units.

120. Scientific Apparatus Makers Association

The Instrument industry supplies English or metric at user request. The Association sponsors the ANMC Instrument Sector Committee.

121. Small Motors Manufacturers Association

No interest in metrication has been indicated.

122. Society of Automotive Engineers, Inc.

SAE standard practice is to use both the English and the metric units of measurement. However, certain standards and recommended practices are in hard metric depending upon the intended application. SAE serves an industry which produces a vast array of vehicles and industrial machines. Some portions of this industry have already converted to metric (e.g. farm machinery) and other areas of the industry will be converting to metric over a period of some fifty years (e.g. aerospace).

123. Society of Motion Picture and Television Engineers

We do have a policy as follows:

"All nongeometric specifications in SMPTE-sponsored American National Standards and SMPTE Recommended Practices shall be in terms of SI (International System) units with conversions to the English system according to ISO practices or standards where needed. For geometric dimensioning, however, that is those specifications of plane angle, length and area, the English or inch system shall remain as primary (with conversions to SI Units), unless the basic design is certified in SI units by the proposer of the standard. When such certification is obtained, the committee may adopt SI units as primary for all specifications and characteristics.

Since the 30's we have been publishing in both systems with the English system prime. More recently, many have been published with metric as the prime system because the subject of the standards was designed in that system.

As you know, it is not possible to specify a subject in a system other than the one it was designed in. Also, with millions of dollars invested in dies, standard stocks, tools, and instruments, it will take several generations for a complete conversion. In conclusion, we are working toward the obvious -- metric".

124. The Society of the Plastics Industry, Inc.

English units are used for monthly production and sales statistics. No codes or standards are produced. The conversion period will be 10 years or longer except for items involved with international trade.

125. Steel Bar Mills Association

Conversion to metric probably depends in large part upon the policy developed by the American Society for Testing and Materials.

126. Steel Founders Society of America

Our members are primarily jobbing founders. Their customers specify English or metric units.

127. Steel Window Institute

The Institute indicated that its constituency would convert to metric in 25-50 years.

128. Technical Association of the Pulp and Paper Industry

Metric articles appear in TAPPI publications.

129. Tire and Rim Association, Inc.

Question 1 - It is not the function of the Tire and Rim Association to establish a formal policy on metrication for the tire, rim and valve industries. However, if a segment of the industry has need for standards in SI units, TRA will provide this information. Consequently, we do have procedures for supplying our information in SI Units.

Questions 4 and 5 - Our standards are primarily published in Customary Units, with a procedure for "soft conversion". We do publish some standards in SI Units. In those cases, the primary dimension is "metric" and the customary is shown as a soft conversion.

**130. Truck Trailer Manufacturers Association**

The time of metric conversion depends on when suppliers to trailer industry (aluminum, steel, fasteners, suspension suppliers) convert.

**131. Tubular Exchanger Manufacturers Association**

The Association's Metric Policy reads:

"Because of the close interrelationship of TEMA Standards to the ASME Code Requirements for Pressure Vessels, TEMA is following a course of timely responsiveness to the ASME projected timetables for metrication.

Hence, metrication of TEMA Standards will be compatible to and consistent with metrication of the ASME Boiler and Pressure Vessel Code. TEMA's metrication stages will either approximate those of ASME or follow shortly after ASME developments.

With respect to ANSI Standards development involving TEMA as a Secretariat or Accredited Committee Method Organization, TEMA is presently providing dual units in standards documents consistent with ANSI policy.

A special standing Technical Subcommittee on Metrication has been established to make recommendations to the full TEMA Technical Committee on all matters related to metrication."

**132. Underwriters' Laboratories Incorporated**

We share in the belief that careful planning and coordination are very important to the ultimate metrication of the United States. To this end, UL has worked with its client-industries since 1972 to add equivalent SI metric units for all stated US customary units in its Standards for Safety. At this time, approximately 75 percent of UL's Standards include equivalent SI units.

**133. United States Pharmacopeial Convention**

There is an Executive Committee on General Metrics. In 1880 the Convention began the incorporation of metric units. Dual system was used until 1950 only in doses. The Convention has been completely metric in all tests and assays since 1892. Metric since 1880/1890. Only a few drug products, with a long history of use, were labeled in Troy units after 1950.

**134. Vacuum Cleaner Manufacturers Association**

VCMA standards work is done primarily through ASTM F-11 Comm. on Vacuum Cleaners. Metrication was discussed at the annual meeting in September 1979. No policy was deemed desirable; each member company would pursue its own course with experience to be shared as desirable.

**135. Water Quality Association**

Over the last fifteen (15) months the Water Quality Association, through its Technical Committee, has been working on the preparation of an acceptable Metric Conversion Standard for our industry. A document was approved by the Association's Board of Directors on September 29, 1980, as representative of conversion information required by our industry and is being distributed to our members as a voluntary program for implementation.

**136. Western Wood Products Association**

We are neither for nor against metrication but are prepared to change when it happens.

**137. Western Wooden Box Association**

Because of our dependence upon the lumber/forest products industry, it will be necessary for them to convert before lumber by-products convert.

**138. Wire Reinforcement Institute**

We passed a policy to use dual numbers, but we have not done this except in one book. U.S. producers will provide a metric product when construction industry converts. Our Canadian members are undergoing metrication now. This situation poses a problem for an association with both U.S. and Canadian members, particularly with publications.

**139. Zinc Institute, Inc.**

We do not have our own specifications, but use the ASTM standards principally. We are very active participants in ASTM's deliberations on specifics relating to Zinc and Zinc codings.

## BIBLIOGRAPHY

The references below were submitted by the responding standards development bodies. Those bodies submitting references are indicated by asterisks in the "Bibliography" column of the preceding chart. The references are listed in alphabetical order of the names of the submitting bodies.

### The Aluminum Association, Inc. (AA)

AA. "Progress Statement". Typed statement submitted to USMB. June 1981.

Statement gives AA metrication policy which is to support the United States national policy on voluntary metrication and to voluntarily use SI units. It also cited AA's contribution to the development of industry metric standards. "Individual companies are publishing metric product data basically derived from ANSI standards on preferred metric sizes either now issued or under development".

### American Concrete Institute (ACI)

ACI. "Building Code Requirements for Reinforced Concrete (ACI/ANSI 318-77)". 5th Printing. August, 1979.

This Code covers the proper design and construction of buildings of reinforced concrete. It is written in such a form that it may be adopted by reference in a general building code, and earlier editions have been widely used in this manner. There is an appendix D, "Metric Equivalents, SI", and an appendix E, "Metric Equivalents, MKS". The conversion of units of length, area, volume, density, and temperature are the same in both the SI-Metric and MKS - Metric systems. Units of load and stress differ in the two systems; a separate set of MKS - Metric conversions is given for these quantities in appendix E.

"Instructions to Committees Regarding Metric Units in the Technical Committee Manual." (Sections 3.4.5 and Appendix A-3), June, 1979.

Under "Units of Measurement", the Instructions state the ACI policy that all of its publications show the values of all quantities in SI. Style designations and conversion factors are also given. Section 3.4.5, Metric Units, states that the ACI Board has set a target date of 1983 for availability of standards in the SI system. "Where the work on which a publication was based was performed in U.S. customary units, both sets of units should be shown."

"List of ACI Standards". April 1981.

Cites title, date, and identifying number of ACI standards.

### American Congress on Surveying and Mapping (ACSM)

ACSM. "Metric Committee". ACSM Bulletin. May 1981. p.45.

Reviews ACSM Metric Committee purpose and activities. "Specific 1981 charge: Prepare a plan for the transition to SI units in the surveying and mapping professions. Be prepared to work with any group requesting aid in facilitating the transition to SI units".

### American Nuclear Society, Inc. (ANS)

Dr. Roy G. Post, "Metric Guide for ANS Publications". April 1981.

Describes guides for use of metric units in all ANS publications. Also contains conversion charts.

### American Pharmaceutical Association (APA)

APA. "Policy Statements of the American Pharmaceutical Association 1963 - 1977".

States that the Association is on record as supporting the routine use of the metric system and recommends that pharmacists use the metric system in their practice and when submitting claims for third party payment.

### American Society for Testing and Materials (ASTM)

ASTM E 380-79, Standard for Metric Practice." 1979.

This standard gives guidance for application of the modernized metric system (SI) in the United States. The standard also has an extensive list of conversion factors to provide equipment values in SI units for miscellaneous units of measure.

ASTM. "Use of Metric (SI) Units in ASTM Standards" from Part H of "Form and Style for ASTM Standards." June 1980.

These instructions are to guide technical committees in the writing of ASTM standards using SI by following ASTM Standard E 380 for Metric Practice and its approved supplementary metric practice guides.

### American Society of Agricultural Engineers (ASAE)

ASAE. "ASAE Metric Policy". Undated.

The Policy statement says "ASAE considers it desirable and necessary for the profession to use SI and thereby make its presentations, publications and standards more understandable and useful to all audiences." For publications, "SI units shall be

the primary units with older units in parentheses effective January 1, 1980. SI units may be the primary units without older units in parentheses but with a conversion table if necessary for comprehension effective January 1, 1981. SI units shall be the primary units without older units effective January 1, 1982. SI units may be used immediately for familiar units with footnotes to explain unusual terms." For standards, engineering practices, and data, "SI units shall be the primary units in all ASAE standards, engineering practices, and data. Older units shall be included in a form acceptable to the ASAE Committee on Standards (T-1), usually in parentheses."

ASAE Committee on Standards (T-1). ASAE Engineering Practice: ASAE EP285.5, "Use of SI (Metric) Units". September, 1980.

This Engineering Practice is intended as a guide for uniformly incorporating SI. It is intended for use in implementing ASAE metric policy. This Engineering Practice includes a list of preferred units and conversion factors.

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc. (ASHRAE)

ASHRAE. "ASHRAE Uniform Metric Policy-Publications". June 27, 1979.

States ASHRAE's policy to use dual units in all of its publications except SI units only may be used at the discretion of the Director of Publications and the Director must give specific approval for use of conventional units only. The Metric Committee serves as the authority for answering questions on SI usage and for preparing the membership for eventual exclusive use of SI units.

The American Society of Mechanical Engineers (ASME)

Council Policy P-9.1 on Metric System, May 4, 1977.

States the ASME Metric Policy, as developed by the ASME Special Committee of the Council on Metric System.

SI-1, ASME Orientation and Guide for Use of SI Metric Units, 1978.

SI-2, SI Units in Strength of Materials, 1976.

SI-3, SI Units in Dynamics, 1976.

SI-4, SI Units in Thermodynamics, 1976.

SI-5, SI Units in Fluid Mechanics, 1976.

SI-6, SI Units in Kinematics, 1976.

SI-7, SI Units in Heat Transfer, 1977.

SI-8, SI Units in Vibration, 1976.

SI-9, ASME Guide for Metrication of Codes and Standards, SI (Metric) Units, 1981.

SI-10, Steam Charts, SI (Metric) and U.S. Customary Units, 1976.

ASME Steam Tables in SI (Metric) Units for Instructional Use, 1977.

The policy of ASME with regard to the adoption and use of SI (metric) units is explained in ASME Guide SI-1: Orientation and Guide for Use of SI (Metric) Units.

As a partial implementation of the goals of the council of ASME, information and educational material has been developed. The ASME Text Booklets for Use of SI Units in Engineering Courses (SI 2 through SI-10) are part of such development. The SI booklets are intended for use by students, teachers, and people in engineering practice. Their makeup is in the nature of a primer. They are not a substitute for textbooks, but are to serve as useful supplements to current textbooks in U.S. customary units. The philosophy of these text booklets is to develop and encourage not only the use of SI units, but the thinking in terms of SI. Problems whose input is in SI terms should be worked in SI. This will encourage the development of SI thinking and visualizing of SI units in terms of their practical application. Once the "feel" for SI units has been obtained, calculations in SI are simpler and faster. For students and others not engaged in daily calculations the introduction of units into the equation is encouraged. Such practice tends to minimize input errors.

The text booklet SI-9 is based on metrication of the ASME Boiler and Pressure Vessel Code and the techniques are useful to members of industry and to other standards writing organizations. There is much more editorial and mathematical work necessary for the metrication of the complex ASME Boiler and Pressure Vessel Code than simple application of conversion factors to data. SI-9 presents guidelines and policies and describes how some of the problems were resolved. Problems were identified and methods were developed for the hard conversion of data.

The "ASME Steam Tables in SI Metric Units" give tables on Saturation Line (Temperature); Saturation Line (Pressure); Conversion Factors for the following: Pressure, Specific Volume, Specific Enthalpy and Energy and Specific Entropy; Enthalpy vs Entropy (Mollier); and Compressed Water and Superheated Steam.

Transactions of Technical Conference on Metric Mechanical Fasteners, 1975.

### American Textile Machinery Association (ATMA)

ATMA. "Guide to Metrication for the Textile Industry". Prepared for Sector Committee 4.05 of the American National Metric Council by the ATMA Metric Conversion Committee.

Contains recommended units, rules, and conventions for metric usage in the textile industry. It was developed to standardize guidelines for textile-related companies in developing metric conversion plans.

### Asphalt Institute (AI)

AI. "A Metric Guide". Information Series No. 165. August 1974.

The guide presents factors for converting from customary to metric those units of measurement most likely to be encountered in the pavement construction industry.

AI. "3. Conversion to Metric Units", extract from minutes of Executive Committee meeting, November 30, 1971.

Recommendation to adopt SI units as policy and to include SI units as alternatives for English units wherever they are used in Institute publications; that these dual units be used until Congress establishes a date for full conversion to metric; and when a date for conversion is established, alternate units be transposed before full conversions take place, with English units as alternates for SI units. It is further recommended that, as Institute publications are reprinted, they include appropriate tabulations of SI conversions, referring to ASTM Standard E380 as the source.

### Associated General Contractors of America (AGCA)

AGCA. "Metric Conversion Committee Report to the Board, March 17, 1981".

Policy recommendation that the AGCA support an orderly conversion to the metric system at the earliest practical date. Describes the considerations which led to the recommendation including presentations at the Construction Community Metric Symposium sponsored in December 1980 by the National Institute of Building Sciences.

### Association of Home Appliance Manufacturers (AHAM)

AHAM, "Statement of Metric Policy".

States AHAM's metric policy that in the development of performance standards for major and portable appliances, all measurements, dimensions and other numerical terms will be, as

much as practicable, stated primarily in customary units and parenthetically in SI units. All units, rounding, etc. to be in accordance with ANSI Metric Practice Guide, ANSI Z210.1-latest revision.

**"AHAM Standard SI Metric Practice Guide for the Appliance Industry", April 1979.**

Describes a recommended voluntary program for communicating the SI system to the consumer in a phased program and provides guidance in using SI within the appliance industry for communicating with the consumer concerning industry standards methods and procedures.

**Chemical Specialties Manufacturers Association (CSMA)**

**CSMA. "CSMA Metrication Policy Statement, February 27, 1980".**

CSMA's metric policy recognizes voluntary conversion as embodied in the Metric Act of 1975. It also recognizes that the responsibility for conversion is with each member company acting with all related parties. Member companies are encouraged to work with ANMC and CSMA states it will work with ANMC to obtain a consensus on proposed plans. Guidelines will be developed by CSMA in areas of members' expertise for submission to appropriate voluntary standards organizations for adoption.

**College of American Pathologists (CAP)**

**CAP. "Statement on SI in Medicine". Appendix G from unspecified publication. September 1979.**

Statement supports SI usage. Recommended SI usage should be developed with involvement of all appropriate parties and coordinated through the American Medical Association. Extensive education should accompany any change which should be accomplished as widely and expeditiously as possible.

**Compressed Gas Association, Inc. (CGA)**

**CGA. "Board Confirms Policy on Metrication of CGA Pamphlets". Compressions. March 10, 1981.**

Describes CGA's policy for all new pamphlets and existing pamphlets as they are revised. Soft metric equivalents are to be shown in parenthesis. Deviations must be accompanied with a recommendation explaining the non-compliance.

**"Metric Practice Guide for the Compressed Gas Industry". CGA P-11 - 1980.**

Guide contains recommendations to the CGA Executive Board on the problem facing the industry in the USA and Canada as it prepares

for conversion. Contains guidelines, definitions, conversion factors, and specified units to be used.

Dairy and Food Industries Supply Association, Inc. (DFISA)

DFISA. "Report of DFISA Task Committee on Metric Practice." May 3, 1978.

Examines those areas in 3-A Standards which contain measurement units and recommends overall guidelines for consistency in metric usage. The Committee considered a modified soft conversion concept.

Gypsum Association (GA)

GA. "A Position Statement on Metrication". July 19, 1979.

States a policy of not opposing metrication but does oppose conversion of board products to "hard" metric sizes based on the proposed 100-mm module. A rationale for this policy is stated.

A. Victor Abnee, Jr., Executive Vice President, Gypsum Association. Address to Construction Community Metric Symposium sponsored by the National Institute of Building Sciences. December 2, 1980.

States the GA's position on metrication and on metric conversion of panel products.

Illuminating Engineering Society of North American (IES)

J.E. Kaufman. "Introducing SI Units, IES Adopts a New Policy on Lighting Units." Illuminating Engineering. October 1968.

States IES policy of having SI units in parentheses after customary units in technical articles, conference papers, committee reports and other IES transactions. A chronology of events leading to the policy and reasons for the policy are given as well as conversion tables.

Institute for Interconnecting and Packaging Electronic Circuits (IPC)

Dieter Bergman. "Proposed IPC Metrication Policy". Memorandum to IPC members. May 5, 1981.

States proposed policy on metrication relating to three elements in its technology: grid systems, detailed drawings, and specifications. Also provides rationale for conclusions.

International Commission on Radiation Units and Measurements (ICRU)

ICRU. "Radiation Quantities and Units." ICRU Report 33. April 15, 1980.

States ICRU policy that it is the responsibility of national organizations to introduce their own detailed technical procedures for the development and maintenance of standards. However, it urges that all countries adhere as closely as possible to the internationally recommended basic concepts of radiation quantities and units. Gives quantities and units for general use and for use in radiation protection.

Metal Cookware Manufacturers Association (MCMA)

MCMA. "A Metric Guide for Cookware and Bakeware". Item 5 of Section 1 - MCMA Standards Manual." November 1, 1976.

Guidelines for the use of manufacturers, retailers, consumers and other users of cookware and bakeware products to assist manufacturers and retailers to better serve consumer needs. They present lists of preferred metric sizes for cookware and lists of a range of sizes for bakeware.

"Metal Cookware and Bakeware with Complete Metric Information". Booklet, 1977-78 edition.

Contains information on qualities, properties, and uses of various types of cookware and bakeware on the market and metric information as it relates to the industry. Measurements are given for a variety of products. For cookware products, guidelines present lists of "preferred" sizes as a means of encouraging product rationalization; for bakeware products, guidelines present lists for a range of sizes generally available.

National Committee for Clinical Laboratory Standards (NCCLS)

NCCLS. "Quantities and Units: SI" PPC-11 1979.

States NCCLS recommendation for a three-phased implementation of SI usage. The three phases are (I) immediate usage of some SI units, (II) certain SI units should be implemented, but gradually in three steps, and (III) certain units should not at this time be implemented. Other policies on specific issues such as cell counts and amount of substance are stated. Also contains a chart listing items, kind of quantity and current and proposed measurement units.

### National Electrical Manufacturers Association (NEMA)

NEMA. "Guidelines for Metric Conversion of NEMA Standards". Engineering Department Bulletin No. 79, June 3, 1976.

Guidelines to help NEMA Sections in converting their standards to metric, describing some of the important considerations in the conversion process. Includes determining a timetable, establishing priorities, deciding on hard or soft conversions, ability to interface with other products, applicable ISO or IEC standards, in addition to other guidelines.

"Legal Guidelines for Metrication of NEMA Standards".

Contains guidelines to help NEMA standardization activities avoid risks of liability under the antitrust laws. The guidelines are divided into two categories: general and special. General guidelines include the topics of voluntary adherence to standards, exclusion of products, patented items, commercial standards, among others. Special guidelines emphasize concerns particular to the metric conversion process such as user input, conduct of meetings, effective date, etc.

### National Fluid Power Association (NFPA)

NFPA. "5.8 Units" from National Fluid Power Association Style Guide." Undated.

Cites the rules to be applied in using units given in the annex to ISO 1000. Corresponding US units should appear in parentheses following the SI unit.

### National Forest Products Association (NFPA)

Lumber and Wood Products Sector Committee, American National Metric Council. "Lumber and Wood Products Metric Planning Package". 1978.

Explains the structure and products of the wood industry for background information and then presents the subsector committee reports. Areas covered include softwood lumber; hardwood lumber; panel products; furniture; poles, piling, and treated wood; and transportation, packaging, and materials handling.

### National Micrographics Association (NMA)

NMA. "Metric Conversion Recommendations/Technical Report". NMA TRI-1979.

States NMA policy that metric conversion should be advanced in a coordinated manner with the private sector. Discusses hard vs soft conversion, metric microfilm standards, packaging and labeling, terminology, and other information for the industry.

National Standards Association, Inc. (NSA)

NSA. Untitled and undated fact sheet on NSA.

Describes NSA areas of interest, holdings, publications, and information services.

Pipe Fabrication Institute (PFI)

PFI. "Access Holes, Bosses and Plugs for Radiographic Inspection of Pipe Welds/Metric Conversions". PFI Standard ES-16. January 1979.

Describes standards for specified items and gives dual units.

Prestressed Concrete Institute (PCI)

PCI. "Policy Statement on Metrication". January 1978.

States that the PCI endorses metric conversion in a well planned orderly fashion to minimize difficulties and to assure logical and compatible standards. Metrication in the construction industry will be monitored with the view of assisting the conversion and achieving reasonable and workable standards.

"Initial Steps for Implementation of PCI Board Policy on Metrication". January 1978.

States seven activities for PCI metrication including soft conversion of citations in PCI publications, expanded educational activities, adoption of the 100-mm module as a basic unit, adoption of a basic panel size of 1200 x 2400 mm, and a metric plan and schedule for hard conversion at the appropriate time.

The Refractories Institute (RI)

Letter to Chairman of TAG to ISO/TC33 (ASTM C-8.91) on refractories containing the report of the USA delegation for the fifth meeting of ISO/TC33/SC3 in 1980. The meeting discussed international standardization of shapes and sizes in the refractories industry. Many of the dimensions considered are in metric units.

Society of Automotive Engineers, Inc. (SAE)

SAE Metric Advisory Committee. "Metrication and SAE". January 1972.

Discusses the metric system, SI usage in the United States, SAE's approach to metrication, and gives SAE's recommended practice for SI usage in its reports, including specifications and standards.

SAE Metric Advisory Committee. "SAE Recommended Practice, Rules for SAE Use of SI (Metric) Units", SAE J916, June 1980.

Establishes the rules for use of SI units in SAE reports, including specifications and standards.

Tubular Exchanger Manufacturers Association, Inc. (TEMA)

TEMA. "TEMA Policy on Metrication". Undated.

States that metrication of TEMA standards will be compatible to and consistent with metrication of the ASME Boiler and Pressure Vessel Code. TEMA is also presently providing dual units in standards documents consistent with ANSI policy.

Water Quality Association (WQA)

WQA. "WQA Submits Recommended (Voluntary) Metric Conversion Standards to U.S. Metric Board". Special Bulletin No. 8/81. January 1981.

Provides a table of recommended metric standards on various physical properties associated with the water industry and a table of conversion factors.

Wire Reinforcement Institute, Inc. (WRI)

WPI. "Metric Welded Wire Fabric." Undated.

Presents recommended metrication of welded wire fabric by the Canadian Welded Wire Fabric Industry.

Please return by July 10, 1981 to:  
 Alan S. Whelihan, Director  
 Office of Coordination and Planning  
 United States Metric Board  
 1600 Wilson Boulevard, Suite 400  
 Arlington, Virginia 22209

U.S. Metric Board  
 Ad Hoc Committee on Standards

Survey of Metrication

- |  | Yes   | No    |
|--|-------|-------|
| 1. Does your organization have a formal policy on metrication? (if yes, please attach a copy of your policy.)          | _____ | _____ |
| 2. What group/person in your organization is responsible for metric activity?  |       |       |
| Member _____   |       |       |
| Staff _____  |       |       |
| 3. What active programs does your organization have underway?  |       |       |
| (a) Conference and/or short courses on metrication   | ===== | ===== |
| (b) Publications devoted to metric instruction   | ===== | ===== |
| 4. Which system of units does your organization primarily use in your technical publications?                          |       |       |
| English (also known as inch-pound or customary)  | _____ | _____ |
| Metric   | _____ | _____ |
| Dual (both English and metric together)  | _____ | _____ |
| 5. If your organization publishes codes and standards which are measurement-sensitive, which units are primarily used? |       |       |
| English  | _____ | _____ |
| Metric   | _____ | _____ |
| Dual   | _____ | _____ |
| 6. How many years do you estimate will elapse before you expect the constituency you serve to be converted to metric?  |       |       |
| 0  | _____ | _____ |
| 10   | _____ | _____ |
| 25   | _____ | _____ |
| 50   | _____ | _____ |
| Other  | _____ | _____ |

\_\_\_\_\_  
 Name

\_\_\_\_\_  
 Organization

\_\_\_\_\_  
 Date

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